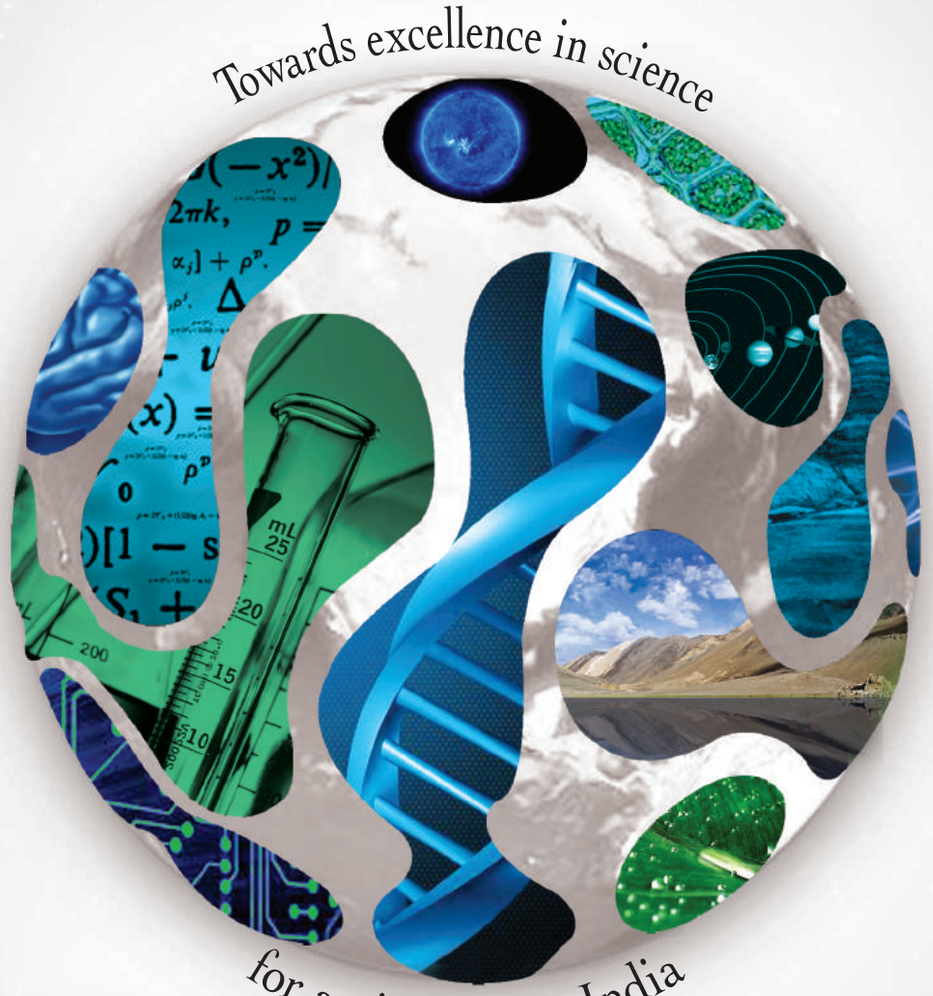
IISER KOLKATA

ANNUAL REPORT
2012-2013



INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH KOLKATA

भारतीय विज्ञान शिक्षा एवं अनुसंधान संस्थान कोलकाता

(An Autonomous Institute under Ministry of Human Resource Development, Government of India)

ANNUAL REPORT
2012-2013

INDIAN INSTITUTE OF
SCIENCE EDUCATION AND RESEARCH
KOLKATA

In this year's report

Foreword

I am happy to bring out the 'Annual Report' of Indian Institute of Science Education and Research (IISER) Kolkata for the year 2012-13. This showcases our continued growth and achievements. The research highlights and accomplishments of faculty members, students and supporting staff members of IISER Kolkata presented in the following pages are a testimony of our activities.

Our emphasis on quality teaching and research in basic sciences continue and our progress in two important fronts – campus construction and creating and establishing a transparent and well-structured administration – is definitely on the positive slope.

The construction activities in the 201-acre permanent campus at Mohanpur (Haringhata) are in full swing. Four-storey hostel blocks – G1 and G2 – with a capacity of 800, the dining block and electrical substation whose construction were re-started in the second half of previous year are nearing completion and those buildings which were initiated during this year are progressing fast. I am very happy that the students will be shifted from the transit campus to the new hostel blocks in July-August 2013. We expect the year 2013-14 to be even more exciting and eventful for the growth of IISER Kolkata. Our plans for the next year include completion of lecture theatre, research complex and the administrative block.

IISER Kolkata is doing well and we are growing every year, as expected. We now have a total of 640 students (UG 406; PG 234), and our plan is to increase this to 2000 in the next five years. I am happy to share the good news that out of a total of 14 students who have completed their PhD degrees working at IISER Kolkata, 6 completed their PhD during 2012-13. IISER Kolkata has regular faculty strength of 77 spread over five departments – biological sciences, chemical sciences, earth sciences, mathematics and statistics and physics. Notably, the activities of each department were showcased during the year through 'Department Day' festivals.

Out of a total of 51 supporting staff members we have added 21 during the current financial year.

The faculty members have been attracting significant support for their research program from funding agencies. In fact, out of a total sanctioned amount of Rs. 39.54 Crore, the amount of grant money received during the FY 2012-13 is quite impressive – Rs. 6.15 Crore. New research facilities have been added on the basis of requirements of the faculty to strengthen scientific infrastructure for research – the top priority of IISER Kolkata.

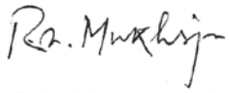
I am happy that this year our faculty and fellows have published around 150 articles, including research papers in journals of international repute, book chapters and books. Notably, our UG students have published 3 research papers and scientific officers 8; thanks are due to a vibrant community of BS-MS students, Integrated PhD students, PhD research scholars, scientific officers and faculty members.

Sports and other co-curricular activities are encouraged at IISER Kolkata and the students are given every form of support to develop their talents in all fields. In fact IISER Kolkata hosted the first Inter-IISER Sports Meet (IISM) bringing together students from all the IISERs and the NISER. Our brand of education does not have narrow horizons, we believe in exposure. Our students are encouraged to widen their knowledge base and study beyond the confines of the syllabus and express themselves through the student-hosted magazine – Muse.

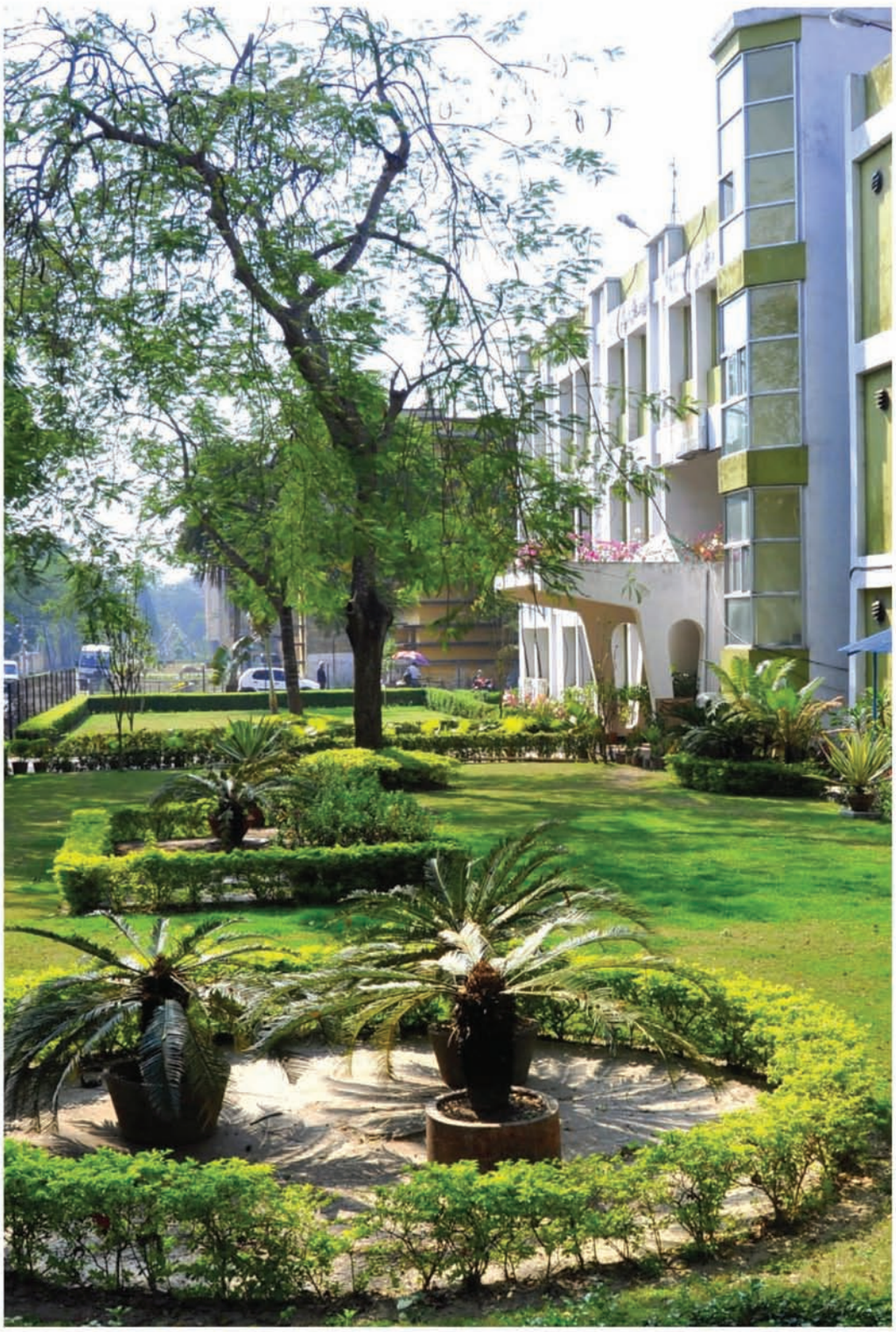
IISER Kolkata aims to be the leading centre for research and education in basic sciences in this part of our country. IISER Kolkata is also active in science outreach activities in the region. We are determined to work harder to scale greater heights.

I am pleased to welcome Shri Pankaj R. Patel, Chairman and Managing Director of Zydus Cadila, as our new Chairperson of the Board of Governors. I am very grateful to the Board of Governors, Academic Senate, Finance Committee and Building Works Committee for their active involvement, useful advice and oversight on Institute affairs. In particular, this year we could put on firm ground the working guidelines of this institute to align with the activities and mission and vision of the institute. Thanks are due to various internal Committees, Head of the Departments, Deans of Academic, Faculty, Research and Development, Students and the Registrar and his team for the hard work they have collectively put to run the Institute.

Finally, I sincerely thank the Annual Report Committee members who have put the best of their efforts in making this report and preparing it on time.



R. N. Mukherjee
Director



The Institute

The Indian Institute of Science Education and Research Kolkata (IISER Kolkata) was established in 2006 by the Ministry of Human Resource Development (MHRD), Government of India with the aim of integrating education with research.

IISER Kolkata 2006-2013

The Journey So Far

"The Scientific Advisory Council to the Prime Minister (SAC-PM) under the Chairmanship of Prof. C.N.R. Rao, recommended creation of five new institutions devoted to science education and research to be named Indian Institutes of Science Education and Research (IISER) broadly on the lines of the Indian Institute of Science (IISc). Bangalore. Five such Institutes have already been established at Kolkata, Pune, Mohali, Bhopal and Thiruvananthapuram. The vision of these institutes encompasses creation of research centres of the highest caliber in which teaching and education in basic sciences will be totally integrated with state-of-the-art research. These Institutions are devoted to under-graduate and post-graduate teaching in sciences in an intellectually vibrant atmosphere of research and make education and career in basic sciences more attractive by providing opportunities in integrative teaching and learning of sciences..."

Ministry of Human Resource Development, Government of India

IISER Kolkata started functioning in the year 2006, and along with IISER Pune, it was one of the first of five IISERs set-up by the Ministry of Human Resource Development in keeping with the recommendations embodied in the vision of the SAC-PM. It has been seven years since IISER Kolkata came into being – not necessarily long enough to reach a high level of maturity or steady-state, but enough to make an objective analysis of the growth of this Institute and to assess whether we are on course to meet the high expectations envisioned by its proponents.

IISER Kolkata began its journey from leased buildings located at the Indian Institute of Technology (IIT) Kharagpur Extension Centre and the National Institute of Technical Teachers' Training & Research (NITTTR) campus located at the Salt Lake area of Kolkata. Here, classrooms, make-shift laboratories and temporary hostels supported our early years. Following the acquisition of a 201 acre parcel of land in Mohanpur – located in the Nadia district approximately 60 Kms North of Kolkata, the Institute moved to Mohanpur in early 2009 to another set of temporarily leased buildings belonging to Bidhan Chandra Krishi Viswavidyalaya (BCKV), the West Bengal University of Animal and Fishery Sciences (WBUAFS) and the Haringhata Farm. The idea was to function from this temporary campus, while overseeing the construction of our permanent campus nearby. On the one hand, being distant from the city, this semi-rural location is challenging in terms of supporting infrastructure; but on the other hand this location offers a lovely natural environment where the Institute plans to build high quality facilities that can cater to an integrated campus life for its faculty and students.

The first batch of Integrated Masters students numbering 38 who enrolled in 2006 graduated in 2011 and since then one more batch has graduated. They were ably supported by a set of pioneering faculty, few in numbers early on, but whose numbers have increased to about eighty currently. Early on, a few faculty were sourced from well-known local Universities but later, most of the new faculty were recruited from around the world. They joined the Institute when it was taking its first tottering steps towards establishment, and they believed in the IISER vision of integrated research and teaching within an intellectually vibrant atmosphere.

Currently, our student strength totals 640, and our faculty strength is 77 with a healthy student-faculty ratio of 8.31. Figure 1 depicts the annual student enrolment since our inception until 2012 (the 2013 batch will enrol in July-August and hence does not figure here). The number of students across all programs, including the Integrated MS program, the Integrated PhD (hereby IPhD) program and the PhD program, has steadily increased. The intake is currently limited by infrastructural issues and it is expected that over the next few years the student enrolment will show a rising trend until it saturates at a student-faculty ratio of 10. When IISER Kolkata reaches its full potential, supported by appropriate infrastructure, it is expected to have around 2000 student and 200 faculty members.

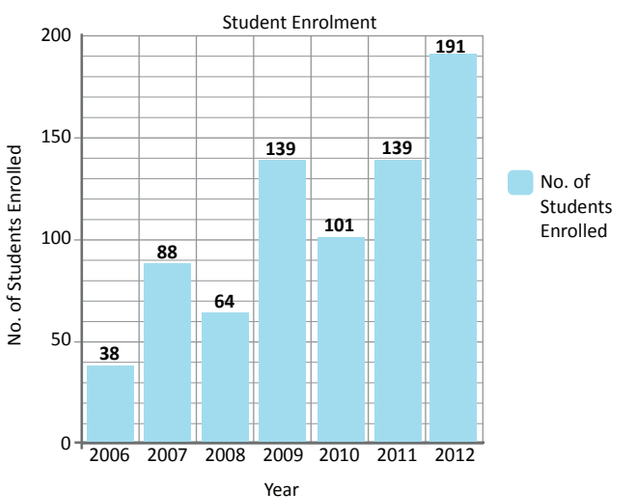


Figure 1: Year-wise student enrolment across diverse programs of IISER Kolkata. The total student strength at the time of writing this report (31st March, 2013) is 643.

Figure 2 depicts the growth in faculty and staff strength over the years. While IISER Kolkata started it's functioning with only the Integrated MS students in 2006, with time the PhD and IPhD programs were introduced. With increasing student strength, the number of faculty has also steadily increased – which provided the Institute enough leverage to introduce new courses and move

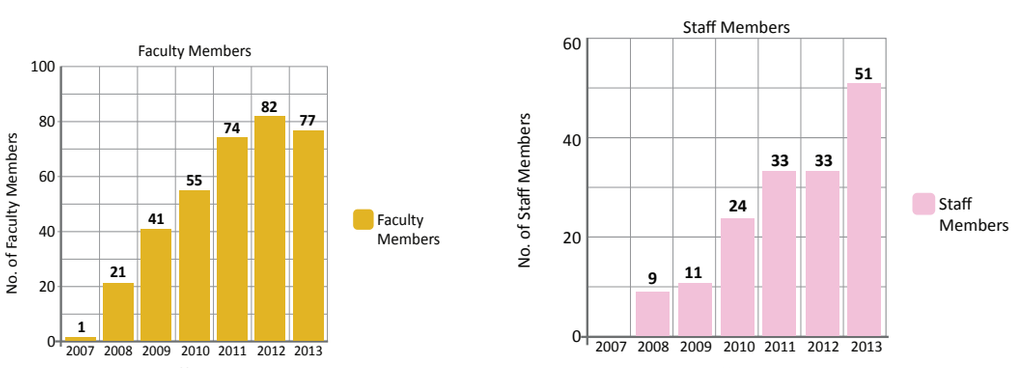


Figure 2: Year-wise faculty (left) and non-teaching staff (right) strength at IISER Kolkata.

towards a mature education and training system integrated across the various programs. In recent years, the growth-rate in faculty strength has flattened. However, we expect that with increasing student enrolment, more faculty recruitment will follow, which will allow the strengthening of core research areas, fill the gaps in our existing research portfolio and further reinforce the student training programs. The administrative functioning of the Institute is aided by staff members, whose numbers have increased with time as IISER Kolkata has moved towards being more self-reliant. While the staff-faculty ratio is still well below one the situation is expected to improve in the future with the sanction of new administrative posts.

Student education and training activities of IISER Kolkata are concentrated on three major programs, namely the five year Integrated BS-MS program, the IPhD program and the PhD program; we also run a MS by thesis program mainly catering to engineering students who desire to switch streams and contribute to the basic sciences.

One prevalent trait in current educational methods which is proving counter-productive in today's research scenario is the compartmentalization of science into rigid boundaries of separate disciplines. One of our guiding principles is that these boundaries should be dispensed with to the extent possible. At the same time, a balance has to be drawn between too wide a curriculum that will teach too little of too many subjects and a restricted curriculum which will allow the students to master only a few essential topics. With these aims in mind, in our Integrated MS program students study all of the major science streams, namely Biology, Chemistry, Mathematics, Physics, and additionally Earth Sciences in the first year of the Integrated MS course. In conjunction to the regular theoretical and experimental courses in these major subjects the students are also trained in a year long course on the applications of computer methods in science. In the second year, the student is expected to choose three of these subjects as pre-majors, and from within these choose one as a major subject in the third year. Additionally, students are required to take some minor subjects and can opt for interdisciplinary courses which may broaden their scientific base. In the final year, the Integrated MS students have to perform a research project and successfully defend the resultant thesis in order to complete the degree requirements.

PhD students form the backbone of research in any institution. In the last twenty years renowned science departments in India have seen unprecedented success in the post-Bachelors Integrated PhD programme which produced outstanding PhD graduates – many amongst them, in the capacity of faculty, have contributed to the so-called "second wave of science" in IISERs, NISER, and other institutes in India. Inspired by this, IISER Kolkata initiated the IPhD program in 2009 for students who have completed their Bachelors in science and engineering. The aim of this endeavour is to attract outstanding and innovative undergraduates to research in basic sciences, and to motivate them to begin research at an early stage of their educational career. The IPhD stu-

dents are required to go through a two year course work giving them a solid foundation in the science discipline of their choice. In the second year itself, they also begin work on a research project leading to a thesis thus introducing them early to the world of scientific research. It has been our experience that this thesis often leads on to a more mature and comprehensive PhD research problem. The regular PhD program of the Institute caters to students who have obtained their Masters degree from elsewhere. These students begin their research work soon after joining the Institute and have to successfully complete a minimum number of course credits as part of their academic training. The coexistence of the Integrated BS-MS, IPhD and PhD students epitomizes the synergy between research and teaching that is achieved in our Institute and their placement and success stories (for details refer to the student enrolment and performance section of this report) is a testimony to the quality of training we impart. Indeed, our students have won the Rhodes and Clarendon Scholarships, and have been placed at Oxford, Cambridge, Cornell, IISc, JNCASR and IIMs amongst others.

The educational training of students is only part of the academic life of a scientist, the rest being devoted to research and connected creative pursuits. Indeed, the name of an Institute is made by its research accomplishments and IISER Kolkata has had a good start in this context. Its faculty are engaged in diverse areas of research, including, but not limited to the understanding the Universe, our planet and the life that it sustains, and the biological, chemical and physical basis of processes that occur in nature and simulated in labs. Research work of a high standard has to be adequately supported not just by able brains, but also by well-equipped Library, laboratories, computational facilities, and major instruments. IISER Kolkata has over the years invested in this essential research infrastructure and can today we have a diverse array of facilities that enables high quality research. Major experimental facilities are built around spectroscopy (like MALDI-TOF, ESIMS, ICPMS, GCMS, CD, RAMAN, NMR etc), Atomic Force- & Scanning electron- and confocal-microscopy, XRDs, EPR, low-temperature magnetism, biological assay and imaging, nano-scale fabrication, material characterization etc., amongst others. A new, multi-institutional national Center of Excellence in Space Sciences, selected for funding by MHRD is being established this year which will enable IISER Kolkata to participate in some of the rapid developments in national space science research, including space missions.

The externally funded, sponsored research activities of IISER Kolkata faculty have shown a healthy growth since its inception (Figure 3). Given the multiple moves, limited infrastructure and space constraints in our temporary campus, setting up of labs and research instruments have been a slow process. So many faculty are plausibly just nearing the stage where they can confidently begin to pursue externally funded research and collaborate together to attract large grants in important thrust areas. We therefore expect the sponsored research activity to slowly grow with time (with large positive fluctuations in those years when a big project comes in).

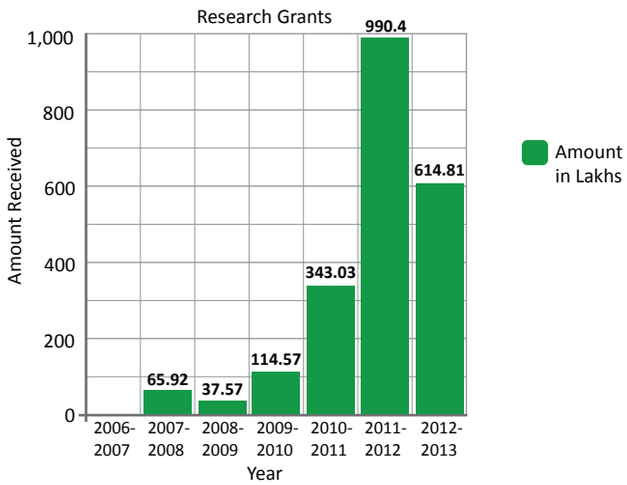


Figure 3: Annual sponsored research grants received by IISER Kolkata faculty from external agencies.

IISER Kolkata publications (depicted in Figure 4) have steadily increased over the years. The early growth (approximately doubling every successive year) reflects the increase in faculty strength, while the growth in recent years is more likely related to increased productivity. Normally, one would expect a rapid growth in the early lifetime of a new institution, with eventual saturation to a steady-state output (if faculty strength remains the same). The best academic Institutions are characterized by a high steady-state output of good quality papers, with a few publications in high-profile (high impact factor) journals. An analysis of IISER Kolkata's publication profile reveals that the average number of publication per faculty per year is about 2. Faculty have published in interdisciplinary journals of international repute such as Nature and in the best journals in their fields. It is to be noted that these publications often involve students, from both the graduate and undergraduate programs.

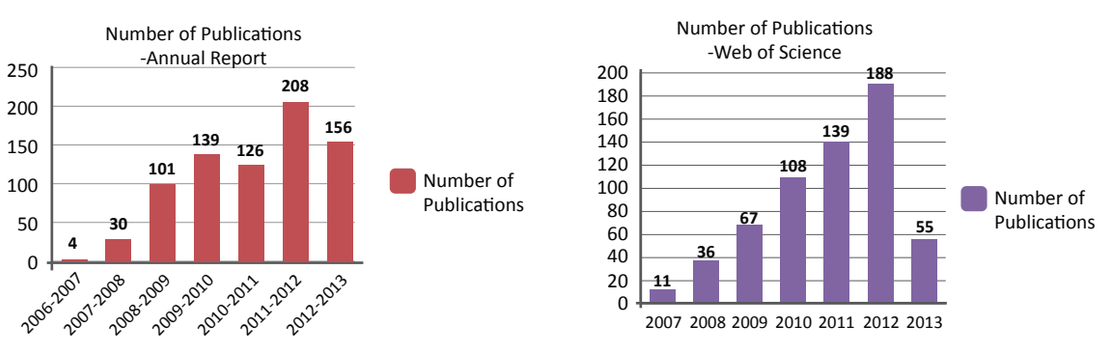


Figure 4: Annual publications from the IISER Kolkata community over the years. The data on the left is total publications, including book chapters, conference proceedings, patents etc., and in journals that are not indexed in the Web of Science (this data is taken from our Annual Reports). The data on the right was collected from the Web of Science at the time of writing this report and it includes only about 3 months of the year 2013.

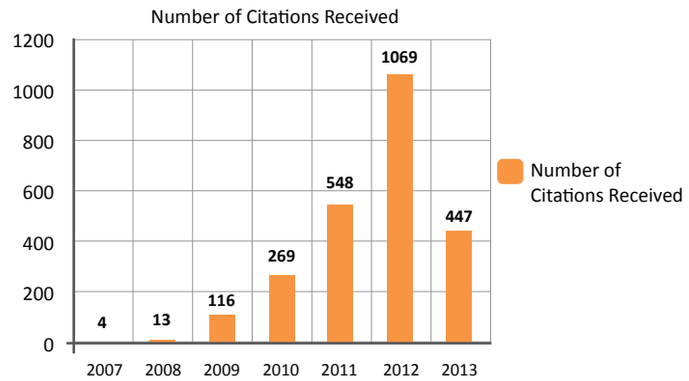


Figure 5: Growth in the number of citations received by all publications emanating from IISER Kolkata over the years sourced from the Web of Science. Note that the data for 2013 includes only the first quarter. The usual caveats related to citation statistics apply, and we stress that this data may be incomplete, and the actual number of citations may be higher than what these numbers depict. Nonetheless, the trends in the data can be taken to be representative of IISER Kolkata community.

It has become a standard practice nowadays to measure the impact and importance of publication through the citation index. Figure 5 depicts the number of citations per year received by publications from IISER Kolkata. Statistics reveal that the average citation received by an article from the IISER Kolkata community is 4.03. The Institutional h-index is 22, which implies that the Institute (treated as an Individual) has 22 papers with at least 22 citations each. The growth rate in citations even after saturation in the number of faculty in recent years and the overall publication-citation statistics is impressive given that we are a relatively young Institution and the Institute is still functioning from a transit campus with limited resources.

Taken together with the excellent placement statistics and achievements of our students, these data on various research performance markers show that IISER Kolkata is involved in high quality education and research activities. Comparisons with other Institutes which started functioning around the same time indicate that IISER Kolkata is doing better academically and its students are better placed. However, more than mere numbers and comparisons, it is noteworthy that the trends in performance are positive with a healthy growth rates. Sustaining a good growth rate and high standard, nevertheless, is a challenging task and separates the best institutions in the world from the average. Our biggest challenge has been the lack of a permanent campus, well-planned research buildings, shortage of space, electric power, hostels and other facilities that are essential for supporting an academic environment. It is hoped that this situation will change soon; otherwise, the lack of infrastructure and space will become a serious impediment in our path towards excellence.

While we have done well in our early years, there is no scope for complacency here. To reach the same level as the best Institutions in India (as envisaged

in the IISER vision laid down by the SAC-PM and MHRD), and hopefully going beyond, necessitates sustained effort by every member of the IISER Kolkata community, including faculty, staff and students. Attaining a level of excellence which is truly global also requires appropriate and high quality infrastructure and above all, a supporting, intellectually vibrant atmosphere tolerant of creative individuals with diverse ideas and outlooks. We hope to imbibe this philosophy of excellence at IISER Kolkata while we move towards the future with optimism.

Editorial Team, Annual Report Committee 2013

Dibyendu Nandi (Convener)

Immanuel Alexander

Saugata Bandyopadhyay

Subhajit Bandyopadhyay

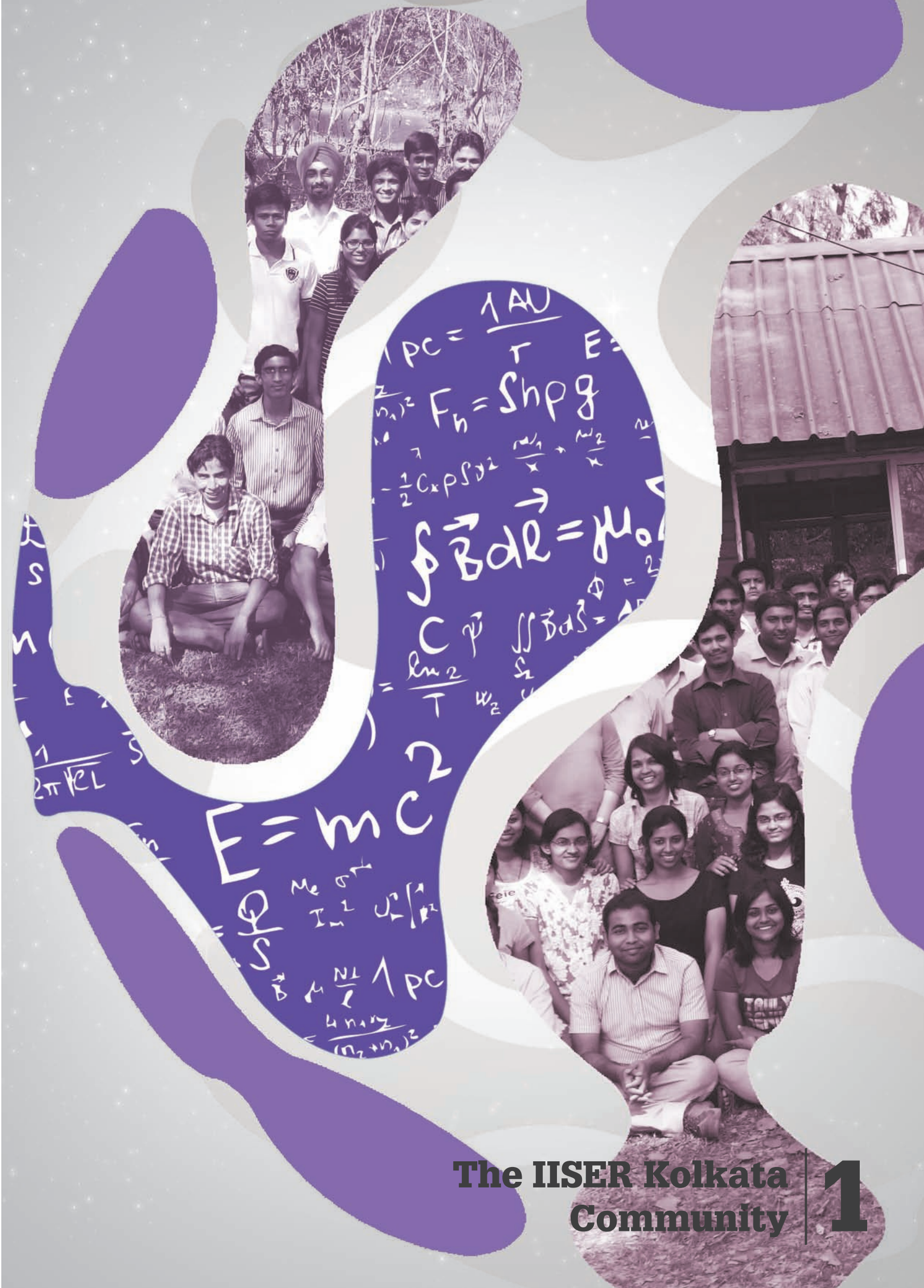
Kathakali Bhattacharyya

Golam Hossain

Siladitya Jana

Mitali Pal

Bidisha Sinha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1.1 Staff Members

Faculty Members

Professors

R. N. Mukherjee
(Director)
Inorganic Chemistry and Bioinorganic Chemistry
PhD - Chemistry
(University of Calcutta, 1983)
FNA, FASc, FRSC (UK)

Narayan Banerjee
Gravitation & Cosmology
PhD - Physics
(Jadavpur University, 1986)

Soumitro Banerjee
Nonlinear Dynamics
PhD - Electrical Engineering
(Indian Institute of Technology Delhi, 1987)
FNA, FASc, FNAE

Chanchal Das Gupta
(till 30.11.2012)
Biology
PhD - Biology
(Saha Institute of Nuclear Physics, Kolkata, 1974)
FNA, FNASc, FASc

Somnath Dasgupta
(on lien/deputation w.e.f. 22.06.2012)
Geochemistry, Petrology
PhD - Geology
(Jadavpur University, Kolkata, 1979)
FNA, FNASc, FASc, FTWAS

Amitava Datta
High Energy Physics
PhD - Physics
(Visva Bharati, Santiniketan, 1974)
FNA

Sushanta Dattagupta
(Superannuated on 31.12.2012)
Condensed Matter and Statistical Physics (Theory)
PhD - Physics
(St.John's / Brookhaven National Laboratory, 1973/74)
FNA, FNASc, FASc, FTWAS

Prasanta Panigrahi
Field Theory
PhD - Physics
(University of Rochester, 1988)
FNASc

Adjunct Professor

Bidyendu Mohan Deb
(till 31.12.2012)
Theoretical Chemistry, Chemical Physics
DPhil (Oxon, 1969)
FNA, FASc, FTWAS

Associate Professors

Tarun Kumar Dalai
Isotope and Trace Element Geochemistry
PhD - Geology
(Physical Research Laboratory/ Maharaja Sayajirao University of Baroda, 2001)

Ananda Dasgupta
Quantum Phenomena (Theory)
PhD - Physics
(Saha Institute of Nuclear Physics, Kolkata / Jadavpur University, 2001)

Jayasri Das Sarma
Neural Cell Biology, Neuro- Science
PhD - Immunology/Chemistry
(Jadavpur University, Kolkata, 1995)

Chiranjib Mitra
Quantum Information Processing, Quantum Magnetism, Strongly Correlated Electron Systems and Magneto-optics
PhD - Physics
(Tata Institute of Fundamental Research, Mumbai, 2001)

Supriyo Mitra
Earthquake Seismology, Continental Tectonics
PhD - Geophysics
(University of Cambridge, 2004)

Balaram Mukhopadhyay
Synthetic Organic Chemistry (Carbohydrate), Glyco-nanotechnology
PhD - Biological Chemistry
(Jadavpur University, 2001)

Asok K. Nanda
Reliability, Statistics
PhD - Statistics
(Panjab University, Chandigarh, 1998)

Dibyendu Nandi
Astrophysical Magnetohydrodynamics, Sun-Earth-System Science, Space Science (Theory)
PhD - Physics
(Indian Institute of Science, Bangalore, 2003)

Bipul Pal
Ultrafast Optical Spectroscopy and Semiconductor Nanostructure
PhD - Physics
(Tata Institute of Fundamental Research, Mumbai, 2004)

Amlan Kusum Roy
Theoretical Chemistry
PhD - Chemistry
(Panjab University, Chandigarh, 1998)

Prasanta Sanyal
Stable Isotopes Geochemistry
PhD – Geology
(Physical Research Laboratory, Ahmedabad/ Maharaja Sayajirao University of Baroda, 2004)

Supratim Sengupta
Complex Systems, Computational Biology & Bioinformatics, Biophysics
PhD – Physics
(Institute of Physics, Bhubaneswar, 2000)

Tapas Kumar Sengupta
RNA Stability, Gene Regulation, Bioremediation
PhD - Biology
(University of Calcutta, 1996)

Subhasis Sinha
Condensed Matter Physics (Theory)
PhD - Physics
(Institute of Mathematical Sciences, Chennai/
University of Madras, 2001)

Ravikant Vadlamani
Crustal Evolution, Isotope Geochemistry and Geochronology
PhD - Earth Science
(National Geophysical Research Institute / Osmania University, Hyderabad, 2002)

Sanjio S. Zade
Organic Electronics Materials
PhD - Chemistry
(Indian Institute of Technology Mumbai, 2004)

Assistant Professors

Sumana Annagiri
Animal Behaviour and Ecology
PhD - Biology
(Indian Institute of Science, Bangalore, 2002)

Saugata Bandyopadhyay
Partial Differential Equations, Differential Inclusions and Calculus of Variations
PhD - Mathematics
(École Polytechnique Fédérale de Lausanne, 2007)

Subhajit Bandyopadhyay
Photochromic Materials; Biomimetic Chemistry
PhD - Chemistry
(University of Victoria, British Columbia, 2004)

Anirban Banerjee
Spectral Graph Theory, Structure & Evolution of Biological Networks, Human
Brain Functional Networks
PhD -Mathematics
(Max Planck Institute, University of Leipzig, 2008)

Ayan Banerjee
Precision Optical Spectroscopy; Optical Sensors (Experimental)
PhD - Physics
(Indian Institute of Science, Bangalore, 2005)

Bhavtosh Bansal
Condensed Matter Physics (Experimental)
PhD – Physics
(Indian Institute of Science, Bangalore, 2005)

Punyasloke Bhadury
Molecular Ecology, Climate Change, Nano-biology
PhD - Biological Science
(University of Plymouth, 2005)

Anuradha Bhat
Community Ecology, Biodiversity and Conservation, Zebrafish Behavioural Ecology
PhD- Biology
(Indian Institute of Science, Bangalore, 2002)

Kathakali Bhattacharyya
Structural Geology
PhD - Earth Science
(University of Rochester, 2010)

Rangeet Bhattacharyya
Methodological Developments in Liquid and Solid State Nuclear Magnetic
Resonance (Experimental)
PhD - Physics
(Indian Institute of Science, Bangalore, 2005)

Sayan Bhattacharyya
Materials Chemistry, Nanotechnology
PhD - Chemistry
(Indian Institute of Technology Kanpur, 2006)

Robert John Chandran
Terrestrial Ecology
PhD – Biology
(Indian Institute of Science, Bangalore, 2001)

Devapriya Chattopadhyay
Invertebrate Paleontology
PhD - Geological Sciences
(University of Michigan, Ann Arbor, 2009)

Debansu Chaudhuri
Organic Semiconductors
PhD - Chemistry
(Indian Institute of Science, Bangalore, 2006)

Koel Das
Computational Neuroscience, Visual Perception, Brain-Computer Interface
PhD - Pattern recognition
(University of California, Irvine, 2007)

Jyotirmayee Dash
(on lien w.e.f. 31.07.2012)
Organic Chemistry
PhD - Chemistry
(Indian Institute of Technology Kanpur, 2003)

Partha Pratim Datta
Structural & Molecular Biology
PhD - Molecular Biology
(Indian Institute of Chemical Biology, Kolkata /Jadavpur University, 2002)

Rupak Datta
Biochemistry, Molecular Cell Biology
PhD – Biology
(Indian Institute of Chemical Biology, Kolkata/ Jadavpur University, 2006)

Supratim Datta
Biochemical Engineering and Bio-energy, Bioinorganic Chemistry
PhD- Biology
(Boston University, Boston, 2005)

Priyadarsi De
Polymer Chemistry
PhD - Chemistry
(Indian Institute of Science, Bangalore, 2002)

Rumi De
Theoretical Biological Physics; Soft Condensed Matter; Nonlinear Dynamics
PhD – Nonlinear Dynamics
(Indian Institute of Science, Bangalore, 2006)

Pradip Kumar Ghorai
Computer Simulation,
Diffusion in Porous Solids and Liquids,
Electron Transfer, Self-assembly
PhD - Chemistry
(Indian Institute of Science, Bangalore, 2005)

Amit Ghosal
Condensed Matter Physics (Theory)
PhD - Physics
(Tata Institute of Fundamental Research, Mumbai, 2001)

Anandamohan Ghosh
Nonlinear Dynamics,
Mathematical and Theoretical Biology
PhD - Physics
(National Chemical Laboratory, Pune / University of Pune, 2004)

Nirmalya Ghosh
Optics & Spectroscopy, Biophotonics
PhD - Physics
(Raja Ramanna Centre for Advanced Technology, Indore/ Devi Ahilya Vishwavidyalaya, Indore, 2005)

Debasish Haldar
Supramolecular Bio-organic Chemistry
PhD - Chemistry
(Indian Association for the Cultivation of Science, Kolkata/Jadavpur University, 2005)

Golam Mortuza Hossain
Gravitation & Cosmology (Classical and Quantum)
PhD- Physics
(Institute of Mathematical Sciences, Chennai/ University of Madras, 2006)

Manoj Jaiswal
Geomorphology, Quaternary Geochronology, Palaeoseismics and Palaeoclimatic Studies
PhD - Geology
(Physical Research Laboratory, Ahmedabad/ Maharaja Sayajirao University of Baroda, Vadodara, 2006)

Sumit Khanra
Molecular Magnetism,
Bioinorganic Organometallic Chemistry
PhD - Chemistry
(Max-Planck Institute for Bioinorganic Chemistry, Mülheim, 2005)

Debasis Koley
Computational Chemistry
PhD - Chemistry
(Max-Planck Institute for Coal Research, Mülheim, 2005)

Arindam Kundagrami
Theoretical Soft Condensed Matter Physics
PhD - Physics
(University of Pennsylvania, Philadelphia, 2003)

Siddhartha Lal
Low-dimensional Quantum Condensed Matter Systems, Strongly Correlated Systems (Theory)
PhD - Physics
(Indian Institute of Science, Bangalore, 2003)

Venkataramanan Mahalingam
Luminescent Nanomaterials and Nanocomposites
PhD - Chemistry
(Indian Institute of Technology Madras, 2001)

Sankar Maiti
Actin Cytoskeleton
PhD - Biology
(Institute of Microbial Technology, Chandigarh, 2003)

Prasun K. Mandal
Single Molecule Spectroscopy
PhD - Chemistry
(University of Hyderabad, 2006)

Swadhin K. Mandal
Organometallic Catalytic Transformations, Nanomaterials
PhD - Chemistry
(Indian Institute of Science, Bangalore, 2002)

Partha Mitra
Magnetism in Mesoscopic Systems and Spintronics Applications
PhD - Physics
(University of Florida, 2006)

Arindam Mukherjee
Metal Complexes, Magnetism, DNA Cleavage,
Anti-cancer Agents, Metalloproteins, Microcalorimetry
PhD - Chemistry
(Indian Institute of Science, Bangalore, 2005)

Goutam Dev Mukherjee
Experimental Condensed Matter Physics
PhD - Physics
(University of Hyderabad, 1997)

Dhananjay Nandi
Laser-Electron-Molecule Collisions,
Photoelectron/Photoion Imaging Spectroscopy,
Ultrafast Electron Dynamics
PhD - Physics
(Tata Institute of Fundamental Research, Mumbai, 2004)

Rajesh Kumble Nayak
General Theory of Relativity,
Relativistic Astrophysics and Cosmology
PhD - Physics
(Indian Institute of Astrophysics, Bangalore, 2002)

Shree Prakash Pandey
Molecular Ecology, Systems Biology, small-RNA
Mediated Gene Regulation
PhD - Biology
(Max Planck Institute for Chemical Ecology, Jena, 2007)

Mohit Prasad
Cell and Developmental Biology
PhD - Biology
(Center for Cellular and Molecular Biology, Hyderabad/
Jawaharlal Nehru University, New Delhi, 2005)

Pradipta Purkayastha
Photochemistry and Spectroscopy
PhD - Chemistry
(Jadavpur University, Kolkata, 2002)

Satyabrata Raj
Condensed Matter Physics (Experimental)
PhD - Physics
(Institute of Physics, Bhubaneswar / Utkal University,
Bhubaneswar, 2001)

Partho Sarothi Ray
Molecular Biology,
Translational Control, RNA-Protein Interaction
PhD - Biology
(Indian Institute of Science, Bangalore, 2005)

Sujata Ray
Soil Mechanics and Environmental Engineering
PhD - Environmental Engineering
(Princeton University, 2007)

C. Malla Reddy
Supramolecular Chemistry, Crystal Engineering
PhD - Chemistry
(University of Hyderabad, 2006)

Sasanka Roy
(till 04.07.2012)
Computational Geometry, Algorithms, Graph Theory
PhD - Computer Science
(Indian Statistical Institute, Kolkata, 2007)

Soumyajit Roy
Materials Science (Experimental)
PhD - Chemistry
(University of Bielefeld, 2005)

Raja Shunmugam
Synthetic Macromolecules,
Drug Carriers, Self-assembling Nanomaterials, Sensors
PhD - Chemistry
(Indian Institute of Technology Madras, 2003)

Subrata Shyam Roy
Operator Theory
PhD - Mathematics
(Indian Statistical Institute, Bangalore, 2009)

Ritesh Kumar Singh
High Energy Physics (Theory)
PhD - Physics
(Indian Institute of Science, Bangalore, 2005)

Bidisha Sinha
Biophysics
PhD - Biology
(National Centre for Biological Sciences – Tata Institute
of Fundamental Research, Bangalore, 2007)

Kaneenika Sinha
(till 18.12.2012)
Number Theory, Arithmetic of Modular Forms, Multiple
Zeta Values
PhD - Mathematics
(Queen's University, Kingston, 2006)

Rituparna Sinha Roy
Engineering Biomimetics for Therapeutic Interests, Nanobiotechnology
PhD – Biology
(Indian Institute of Science, Bangalore 2005)

P. A. Sreeram
(till 06.09.2012)
Quantum Many Body Theory
PhD - Physics
(Institute of Physics, Bhubaneswar/ Utkal University, Bhubaneswar, 2000)

Malancha Ta
Stem Cell Biology
PhD - Biology
(National Institute of Immunology, New Delhi, 2000)

Ashwani Kumar Tiwari
Theoretical Reaction Dynamics
PhD - Chemistry
(Indian Institute of Technology Kanpur, 2007)

Prashanth C Upadhya
Terahertz Spectroscopy, Ultrafast Phenomena in Condensed Matter and Nanophotonics
PhD - Physics
(University of Cambridge, 2004)

Assistant Professors (On Contract)

Veerandra V. Awasthi
Algebraic Topology
PhD - Mathematics
(Harish-Chandra Research Institute, Allahabad, 2008)

Sriram Balasubramanian
Functional Analysis
PhD - Mathematics
(University of Florida, 2010)

Melinda Kumar Bera
Sedimentology, Sequence Stratigraphy, Stable Isotope Geochemistry
PhD - Geology
(Indian Institute of Technology, Kharagpur, 2011)

Satyaki Mazumder
Outlier Detection in High Dimension, Spatial Trimming
PhD - Statistics
(University of Texas at Dallas, 2010)

Himadri Mukherjee
Algebraic Geometry, Commutative Algebra
PhD - Mathematics
(Northeastern University, Boston, 2008)

Abhijit Pal
(till 24.08.2012)
Geometric Group Theory
PhD - Mathematics
(Indian Statistical Institute, Kolkata, 2011)

Jitendra Kumar Pattanaik
Application of Cosmogenic Radionuclides in Geosciences
PhD - Earth Sciences
(Pondicherry University, 2010)

Priyanka Shukla
Fluid Mechanics, Nonlinear Dynamics, Hydrodynamic Stability, Granular Flows, Pattern Formation
PhD - Mathematics
(Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore, 2011)

IISER Fellows

Anindita Bhadra
Animal Behaviour, Evolution, Ecology
PhD - Animal Behaviour
(Indian Institute of Science, Bangalore, 2008)

Mousumi Das
Computational and Theoretical Chemistry
PhD - Chemistry
(Indian Institute of Science, Bangalore, 2006)

Pradip Khatua
Giant Magneto-resistance, Spintronics in Semiconductors, Mesoscopic Physics in Superconductors
PhD - Physics
(Indian Institute of Technology Kanpur, 2006)

Visiting Faculty

S. N. Bhattacharya
(till 14.12.2012)
Earth Science
PhD (University of Delhi, 1973)

Alok Kumar Mazumdar
(till 31.12.2012)
Condensed Matter (Experiments)
PhD (Carnegie Mellon University, USA, 1971)

Ramanujan Fellow

Sutapa Bose
Soil and Crop Science, Soil Pollution and Solid Waste Management, Heavy Metal Pollution and Phyto-remediation
PhD-Environmental Science
(Jawaharlal Nehru University, New Delhi, 2005)

Guha Dharmaranjan
Population Biology, Disease Ecology
PhD-Biology
(Purdue University, 2008)

Inspire Faculty Fellow

Argha Banerjee
Modeling and Field Studies of Glaciers
PhD -Physics
(Tata Institute of Fundamental Research, Mumbai, 2011)

Senior Scientific Officers

Uday Kumar
Physics
PhD (University of Bombay, 2003)

K. Srikanth
Chemistry
PhD (Indian Institute of Technology Bombay, 2001)

Scientific Officers

Parna Gupta Bhattacharayya
Synthetic Inorganic Chemistry
PhD - Chemistry
(Jadavpur University, 2004)

Indrajit Chatterjee
MSc, Physics

Administrative Staff

Joydeep Sil
Registrar

Prakash Hazarika
Deputy Registrar (Finance & Accounts)

Shahid Ali Farooqui
Junior System Administrator

Siladitya Jana
Assistant Librarian

Sanad Kumar Shukla
Assistant Registrar

Sushmita Bhattacharjee
Assistant Registrar (Admin. & Academics)

Santanu Das Mahapatra
Assistant Registrar (R&D)

Devakivada Govinda Rao
(on lien w.e.f. 24.01.2013)
Assistant Registrar (Finance & Accounts)

Rana Bhadra
Technical Officer

Arnab Kumar Sadhukhan
Technical Officer

Sunita Basak
Technical Officer (Civil)

Partha Banerjee
Technical Officer (Electrical)

Somraj Gupta
Medical Officer

Immanuel Alexander
Private Secretary to Director

Shibajee Das
Assistant Engineer (Civil)

Debabrata Majumder
Assistant Engineer (Electrical)

Arup Kumar Saha
Office Superintendent (Admin)

Suraj Narayan Bordoloi
Office Superintendent (R&D)

Mettu Vasudev
Physical Education Instructor

Rajan Thomas
(on lien w.e.f. 10.07.2012)
Personal Assistant

Biswajit Das
(on lien w.e.f. 01.03.2013)
Accountant

Shibnarayan Pal
Accountant

Saberi Sen
Personal Assistant

Mitali Pal
Personal Assistant

Arnab Chattopadhayay
Technical/Scientific Assistant

Sanjib Das
Technical/Scientific Assistant

Rajni Marick
Technical/Scientific Assistant

Santosh Ch. Das
Scientific Assistant

Subhankar Das
Technical Assistant (Civil)

Sushanta Kumar Roy
Library Information Assistant

Pitambar Naskar
Library Information Assistant

Abhinaba Basu
Software Assistant

Puskar Das
Office Assistant (MS)

Raju Sethi
Office Assistant (MS)

Himanshu Ghosh
Office Assistant (MS)

Prasanta Kumar Bhui
Office Assistant (MS)

Sukhendu Chatterjee
Office Assistant (MS)

Ashok Das
Office Assistant (MS)

Surashree Dutta
Office Assistant (MS)

Sudip Mitra
Laboratory Technician

Piyali Bose
Laboratory Technician

Gour Gopal Paul
Laboratory Technician

Rupan Chandra Rakshit
Laboratory Technician

Debabrata Sutradhar
Laboratory Technician

Aveek Chattopadhyay
Laboratory Assistant

Pintu Das
Laboratory Assistant

Sudhangsu Maity
Laboratory Assistant

Saroj Kumar Nayak
Laboratory Assistant

Subhas Malo
Attendant

Sanjith Kumar Singh
Attendant

Honorary Professors

Prof. Sankar Adhya
Chief, Developmental Genetics Section
Laboratory of Molecular Biology, NCI, NIH
Bethesda, Maryland, USA

Pandit Ajoy Chakraborty
ITC Sangeet Research Academy
Tollygunge, Kolkata, India

Dr. Sankar Chatterjee
Paul Whitfield Horn Professor of Geosciences & Curator of Palaeontology
Museum of Texas Tech University
Lubbock, Texas, USA

Prof. Supriyo Datta
Thomas Duncan Distinguished Professor of Electrical and Computer Engineering
School of Electrical & Computer Engineering
Purdue University
Indiana, USA

Prof. Raghavendra Gadagkar
INSA S N Bose Research Professor and
J C Bose National Fellow
Centre for Ecological Sciences
Indian Institute of Science
Bangalore, India

Prof. Jibamitra Ganguly
Department of Geosciences
University of Arizona
Tucson, Arizona, USA

Prof. Jainendra K. Jain
Erwin W. Mueller Professor
Department of Physics
The Pennsylvania State University
Pennsylvania, USA

Prof. Ram Murthy
Professor and Queen's Research Chair
Department of Mathematics
Queen's University
Kingston, Ontario, Canada

Prof. Kalyan B. Sinha
Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR)
Bangalore, India

Prof. Ajay K. Sood
Department of Physics
Indian Institute of Science
Bangalore, India

Prof. Mriganka Sur
Paul E. Newton Professor of Neuroscience
Head, Department of Brain and Cognitive Sciences
Massachusetts Institute of Technology (MIT)
Massachusetts, USA

1.2 Achievements of Staff Members

Faculty Members

Dr. Subhajit Bandyopadhyay
Department of Chemical Sciences
Awarded Indo-German DAAD visiting fellowship in 2012 and INSA-Australian Academy of Sciences visiting fellowship in 2013

Prof. Soumitro Banerjee
Department of Mathematics and Statistics
Elected Fellow of the Third World Academy of Sciences (TWAS)

Dr. Melinda Bera
Department of Earth Sciences
Received INSA Young Scientist Award in 2012

Dr. Punyasloke Bhadury
Department of Biological Sciences
Invited member of the Horseshoe Crab Specialist Group of the International Union for Conservation of Nature (IUCN)

Achievements of Staff Members

Faculty Members

Dr. Devapriya Chattopadhyay
Department of Earth Sciences
Received UKIERI Staff Exchange Award

Dr. Jayasri Das Sarma
Department of Biological Sciences
Received 2013 ASM-IUSSTF Indo-US Research Professorship from the American Society for Microbiology and Indo-US Science and Technology Forum to develop a bilateral research relationship

Dr. Swadhin Mandal
Department of Chemical Sciences
Received YIM-Boston Young Scientist Award in 2012 from the Young Investigators Meet-Boston, USA

Dr. Dibyendu Nandi
Department of Physical Sciences
Elected Chairman of Working Group on Impact of Magnetic Activity on Solar and Stellar Environments of the International Astronomical Union (IAU), and Elected Vice-Chairman of the Panel on Space Weather of the Committee on Space Research (COSPAR)

Achievements of Staff Members

Faculty Members

Prof. P.K. Panigrahi
Department of Physical Sciences
Elected Fellow of National Academy of Science, India, (NASI, Allahabad)

Dr. Bidisha Sinha
Department of Biological Sciences
Awarded Ramanujan Fellowship in 2012 by the Department of Science and Technology, Govt. of India

1.3 Student Achievements

Barun Majumdar
Department of Physical Sciences
Offered and accepted faculty position at IIT Gandhinagar, immediately after submitting his PhD thesis with several single author papers to his credit

Parijat Sarkar
Department of Biological Sciences
Received Shyama Prasad Mukherjee Fellowship of CSIR

Administrative Report 2

2.1 Administrative Report

During the year 2012-13, the following major administrative activities were undertaken:

1. Meetings:
   a. One meeting of IISER Kolkata Society on 22.06.2012
   b. Four meetings of IISER Kolkata Senate on 15.06.2012, 17.10.2012, 28.12.2012 and 15.03.2013
   c. Three meetings of the Board of Governors on 22.06.2012, 08.11.2012, and 22.03.2013
   d. Three meetings of the Finance Committee on 22.06.2012, 08.11.2012, and 22.03.2013
   e. Four meetings of the Buildings and Works Committee on 19.06.12, 07.11.12, 26.12.12 and 12.02.13
2. The National Institutes of Technology (Amendment) Act, 2012 (Act No. 28 of 2012) has been passed in the Parliament of India with the assent of the President on the 7th June, 2012. All the five IISERs have come under the ambit of the said Act, vide 'The Second Schedule' of the NIT (Amendment) Act. As per Clause 26(1) of the Act, the Ministry is in the process of framing the First Statutes for each IISER.
3. Shri Pankaj R. Patel, Chairman and Managing Director of Zydus Cadila, attended his first meeting as the new Chairperson of the Board of Governors of IISER Kolkata on 22.03.2013.
4. The functional guidelines of IISER Kolkata were approved by the Board of Governors in its 21st meeting held on 22.03.2013.
5. The Senate in its 8th meeting nominated Prof. Narayan Banerjee and Prof. Soumitro Banerjee as members of the Board of Governors of IISER Kolkata.
6. The Senate in its 9th meeting changed the name of the degree 'MS in Earth Sciences' to 'MS in Geological Sciences.'

Research & Training 3

3.1 Activities

3.1.1 Department of Biological Sciences

The Department of Biological sciences is constituted of 21 faculty members, currently catering to the academic training of about 250 BS-MS and Integrated PhD students and 40 PhD students. In the academic year 2012-13, with the joining of Dr. Guha Dharmajan, a Ramanujan Fellow, the Department's research expertise expanded to include the field of disease ecology. In terms of research output, 4 book chapters and 15 papers were published in both international and national journals within this period. Biology laboratories are now spread out in five different buildings with scientists sharing instruments, resources and infrastructure. The new facilities introduced during this year include a Flow Cytometer, a Genetic Analyzer, a Real Time PCR, a Gradient Station and a Multi-label Microplate Reader. Funds for these and other infrastructural expansions were received from various national and international agencies (amounting to approximately Rupees Three Crores) as well as the institute's start-up support aid.

Development in the context of departmental teaching activities included a thorough restructuring of the first year Integrated BS-MS syllabus to adapt to the new pre-major choice introduced at the second year. This year also saw the graduated BS-MS (2007 batch) students clearing their UGC-CSIR exams with a high success-rate of 85% and Department students being placed in reputed PhD programmes both in India and aboard. A few BS-MS students also published their work in peer-reviewed scientific journals. Parijat Sarkar, a 5th year BS-MS student, ranked 3rd in the CSIR examination. In the PhD programme, Imroze Khan graduated this year, being the first PhD student to graduate from the Department and start his postdoctoral work.

Interaction with scientists, both from India and abroad, was realized through the Department Day, a winter workshop and regular Wednesday-seminars. The first Department Day was held on 6th March 2013 in which three eminent scientists were invited from across the country. In December 2012, the "Science Academies' Refresher Course in Experimental Biology for college and University teachers" was held jointly by the three National Academies of Science and the Department of Biological Sciences.

The academic year 2012-13, therefore, was abuzz with activities, numerous accomplishments and a growth curve that bodes well for the future.

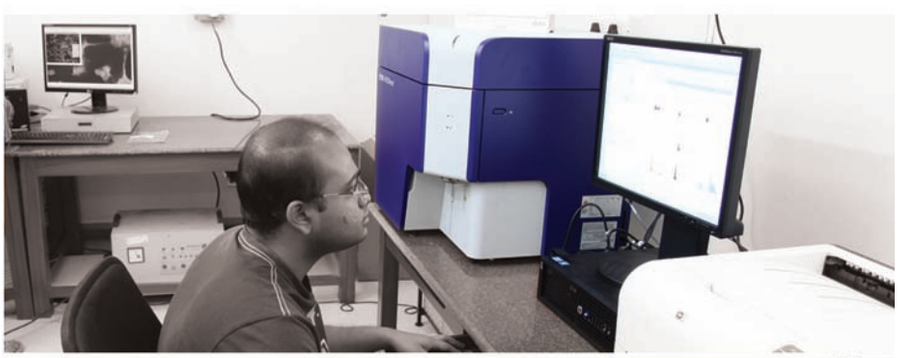
New Important Experimental Facilities Introduced

Flow Cytometer

The Department of Biological Sciences has installed its second flow cytometer, a BD FACSversE Flow Cytometer, which can be used for cell cycle analysis, protein expression, measurement of metabolic activity and apoptosis. The instrument offers remarkable performance, flexibility, and ease of operation for research applications using up to 10 parameters bench capacity with solid state air cooled, triple lasers (488 nm Blue; 635nm and 405nm). The new fluidics design also enables the widest selection of sample input devices and is compatible with small volume microcentrifuge tubes (~200 µl) to large (up to 50 ml) conical tubes for continuous sample acquisition. The optional BD FACS™ Universal Loader provides walkway operation with samples loaded in either microtiter plates or tuberacks. The BD FACSuite™ software enables the BD FACVerse™ analyzer to provide the ultimate in ease of use and flexibility while generating the highest quality reproducible data possible.

3500 Genetic Analyzer 8 Capillary System with All Standard Accessories

The Department of Biological Sciences has recently acquired and installed an ABI 3500 Genetic Analyzer 8-Capillary System for undertaking genomics research. The 3500 series is an integrated platform designed for the optical and thermal subsystems with an innovative consumables system approach. The platform can be used for long-read DNA sequencing, fast resequencing and versatile fragment analysis assays including T-RFLP.



Stepone Plus 96 Well Real Time PCR

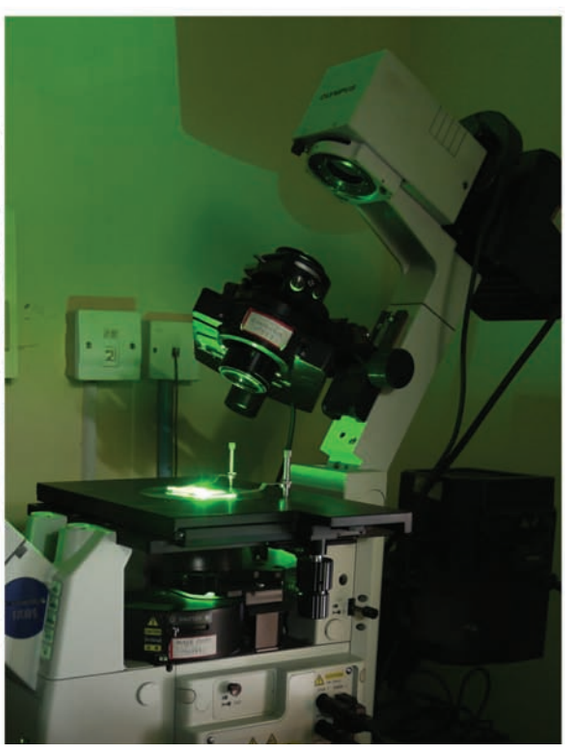
The Department has installed its third real time PCR sytem, the StepOnePlus, which is a 96-well Real-Time PCR instrument perfect for both first-time and experienced users. Utilizing robust LED based 4-color optical recording, the StepOnePlus™ Real-Time PCR System is designed to deliver precise, quantitative Real-Time PCR results for a variety of genomic research applications. It can record fluorescence from FAM™/SYBR® Green, VIC®/JOE™, NED™/TAMRA™, and ROX™ dyes. It can discriminate between 2 populations of 5,000 and 10,000 template copies of a TaqMan® assay with 99.7% confidence. The StepOnePlus™ Real-Time PCR System also has advanced temperature control through use of VeriFlex™ Blocks technology that allows the usage of six different temperatures in a single PCR run. The StepOne™ Software included with the StepOnePlus™ Real-Time PCR System runs on Windows® XP, Windows Vista®, and Windows® 7 operating systems and provides instrument control, data collection, and data analysis capabilities.

Gradient Station Gradient Former and Fractionator

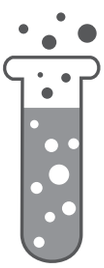
The Department has acquired an automated density gradient former and fractionator from BioComp Instruments of Canada which combines a programmable gradient maker and gradient fractionator which can form a variety of density gradients required for subcellular fractionation and then separate them into fractions for further analysis. It uses a patented vertical displacement technique for gradient fractionation and also allows visualization of bands in gradients by visible light scattering, allowing visual detection of particles as small as ribosomes. It also forms the gradient by a unique tilted tube rotation method, allowing the rapid and easy generation of up to six density gradients. It provides a direct reading of fraction absorbances through a computer interface allowing the automatic calculation of peak areas etc.

Multilabel Microplate Reader

The Department has installed the Plate CHAMELEON V Multilabel Microplate Reader which combines the capability to read radio labeled samples with the most common non-radioactive label technologies such as fluorescence, luminescence and absorbance. The Plate CHAMELEON is also equipped to read time resolved fluorescence assays and fluorescence polarization assays. It has an ingenious optical design with Filtered and Direct Detection Modes that facilitates not only the broadest variety of applications, but also highest available sensitivity in all detection mode. The instrument is capable of reading 6-384 well plates with all assay technologies.



3.1.2 Department of Chemical Sciences



Within an interdisciplinary atmosphere, the Department of Chemical Sciences is committed to excel in research and teaching. Research in the Department is multi-dimensional and focuses on different aspects of inorganic, organic, physical, materials, polymer and biochemistry, as well as in the interdisciplinary research areas at the interface of Physics, Biology and Earth Sciences. The same is true with the teaching curricula as well. Courses such as Bioinorganic Chemistry, Medicinal Chemistry and Chemical Perspectives of Biological Pathways (Bioorganic Chemistry) lay the foundation for biologists, biochemists and chemists alike. Our courses in the areas of Single and Multiphoton Spectroscopy, Computational methods, Structure and Dynamics are designed to cater a wide range of students from all branches in science. Prior to these courses, the traditional Inorganic, Organic, Physical Chemistry, and courses such as Thermodynamics and Group Theory are taught to provide the students with a good grasp of the fundamentals. This year, a new course on Inorganic Chemistry and Spectroscopy Laboratory for 3rd year BS-MS and PBIP students was introduced.

The Department has well-equipped instrumentation facility for carrying out cutting-edge research. 500 MHz and 400 MHz NMR facility, QTof Micromass, Single Crystal X-ray, X-ray Powder Diffraction, Atomic Force Microscopy, Scanning Tunnelling Microscopy to name a few. In addition, the Department has a good Computational facility and a well-equipped undergraduate laboratory with all modern instruments.

Currently the Department of Chemical Sciences is one of the largest Departments having more than 85 Ph.D students, 19 Integrated PhD students, 50 BS-MS (third year onwards) and 22 faculty members. It is a matter of great satisfaction that the Department's BS-MS students have joined some of the best research institutions as PhD students both within and outside the country, while some have gone to industries. Until now 8 PhD students have graduated from this Department and are holding postdoctoral positions in reputed places around the world.

The Department has been highly productive in terms of research papers, not merely in terms of the number, but also in terms of citation and quality, with publications in *Nature*, *Angewandte Chemie*, *Advanced Materials* among others. The Department is generously funded by the National funding agencies such as the Department of Science and Technology, Department of Biotechnology and Council of Scientific and Industrial Research. In addition, the Department has strong collaborations with industries and foreign universities.

New Important Experimental Facilities Introduced

Fluorescence Spectrometer
Horiba Instruments, Japan

Scanning Electron Microscopy (SEM)
Carl Zeiss , Germany

Dynamic Light Scattering (DLS)
Malvern Instrumentation UK

Ultrasonic Microwave Reaction System Sineo Mas II
Xianou Tech., China

Surface Area Analyzer Micromeritics Gemini VII-2390t
Micrometrics, USA

Small Angle X-ray Scattering (SAXS)
Rigaku Smartlab, Japan

Tabletop Scanning Electron Microscope Hitachi TM3000
Hitachi, Japan

CHNS/O Analyzer 2400 Series II
Perkin Elmer, USA

3.1.3 Department of Earth Sciences

The Department of Earth Sciences has 14 regular faculty members: one Professor, four Associate Professors, four Assistant Professors, two Assistant Professors-on-contract, one Ramanujan Fellow, and one DST INSPIRE Faculty Fellow. The faculty members synergistically collaborate with each other to develop a modern centre for Earth Science Education and Research in four core areas of: (1) Isotope Geochemistry, (2) Solid Earth Studies, (3) Paleoclimatic, Paleoenvironmental and Paleoecologic Studies, and (4) Environmental and Ecological Studies in Modern Systems. The Department offers a combination of 12 theory, 8 laboratory, and 2 field courses to develop a process-based understanding of the Earth as a system. In addition, the Department offers 4 interdisciplinary courses that are designed to highlight studies in overlapping areas of other basic and applied sciences with Earth Sciences. The first batch of Integrated BS-MS students graduated during the academic year 2012-13. It is gratifying that eighteen of these twenty nine students are currently pursuing research careers in esteemed institutions in India and in abroad. At present, the Department has 44 BS-MS major, 1 Integrated PhD, and 9 PhD students.

During this academic year, the faculty members developed seven new research facilities in the Department. These are (1) Organic Geochemistry Laboratory, (2) Q-ICPMS (Quadrupole Inductively Coupled Plasma Mass Spectrometer) Laboratory (3) Ion Chromatography Laboratory, (4) Microwave Digestion System,(5) Rock and Mineral Processing Laboratory, (6) Marine Aquarium Facility for Neontological Experiment, and (7) Image Analysis Facility for Morphometric Analysis. The Department organized its first Annual Day on 9th March, 2013, where eminent geoscientists of the country presented their research and interacted with the students. Students from the Department and other prominent institutions from the country actively participated in a student poster session during the Annual Day.

At present, the Department has eleven ongoing, externally funded projects sanctioned to various faculty members; the funding agencies are DST, MoES, CSIR and UKIERI. During the academic year 2012-2013, Dr. Melinda Bera was the recipient of the INSA Young Scientist Award, and Dr. Devapriya Chattopadhyay received the UKIERI Staff Exchange Award.

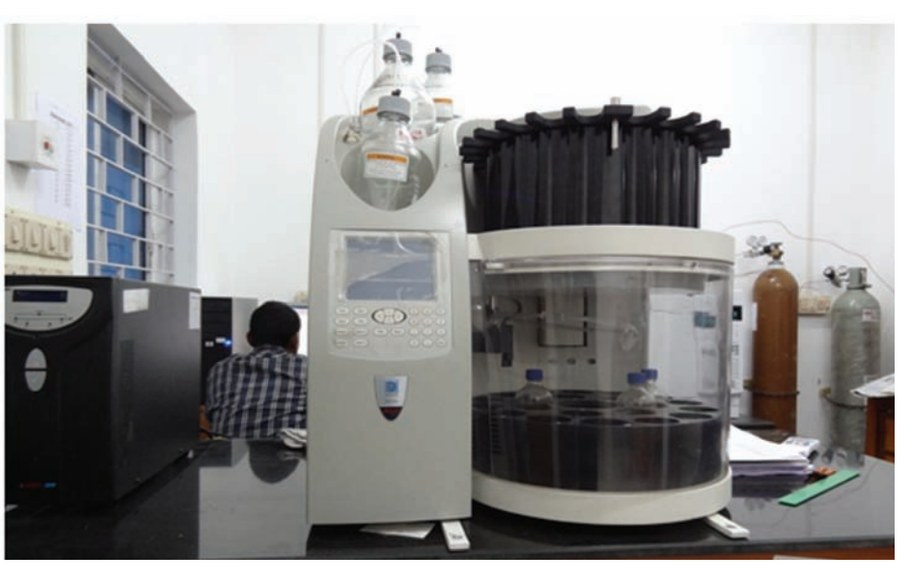
New Important Experimental Facilities Introduced

Organic Geochemistry Laboratory at Climate Change Centre

A state-of-the-art laboratory is being set up for analyzing novel biomarkers at part-per-trillion level. We have installed a GC-MS-MS, Accelerated Solvent Extractor, Rotovap and multivap units. These instruments help in extraction and characterization of organic compounds used for both modern and past climate, ecology and biodiversity studies.

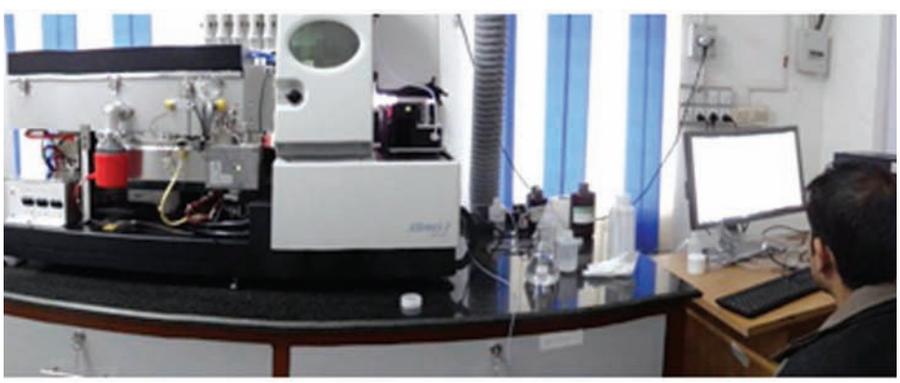
a. GC-MS-MS: Triple Quadruple GC MS MS System (Agilent: Model No. 7000B) with Flame ionization Detector (FID) and Multifunctional Pyrolyzer. This Highly sensitive instrument can measure mass up to 1050amu.

b. Solvent Extractor: Dionex Accelerated Solvent Extractor (ASE 350) is used to extract organic compounds from modern plants, soil and paleosol.



Q-ICPMS (Quadrupole Inductively Coupled Plasma Mass Spectrometer) Laboratory

A Thermo™ XSeries2 Quadrupole Inductively Coupled Plasma Mass Spectrometer was installed which is capable of precise and accurate analysis of elements in various matrices, including rock, mineral, fossil and alloys. The present mode of operation is in solution form being aspirated through a PFA nebulizer (400microlitre/min flow rate) and injected into the Argon plasma for ionization. Detection is carried out, after quadrupole mass discrimination, on continuous channel Secondary Electron Multiplier, in pulse or analog mode. The instrument has been setup to routinely detect concentrations of nanogram per gram levels (ppb) or lower (picogram per gram, ppt levels) in appropriately diluted solutions in 1% HNO_3.



Rock and Mineral Processing Laboratory

a. Thin section preparation unit: Struers™ Discoplan TS 10 vacuum assisted machine, equipped with 35 and 70 micrometer diamond tipped grinding wheels, and an automatic lapping machine were installed to prepare optically transparent 20 micron-thin, glass slide mounted slices/wafers for microscopic studies of rocks.

b. Magnetic barrier laboratory mineral separator: Mineral processing and separation is carried out on a SG Frantz™ LB1 laboratory magnetic barrier separator on about 75 to 300 micrometer sized, dry mineral grain aggregates. Final separation of common accessory minerals zircon, monazite and apatite, from mixed non-magnetic quartz and feldspar grains, are done either in heavy mineral liquid or carried out under a binocular microscope in ethanol immersion, before proceeding to mounting them in epoxy.

Ion Chromatography Laboratory

It comprises of a highly versatile Dionex ICS 5000 system with gradient pump, conductivity detector, electrochemical detector and variable wavelength detector. This system is capable of measurement of major ions, heavy and trace metals; and carrying out speciation analysis.

Microwave Digestion System (Anton Paar Model Multiwave 3000)

This unit is capable of digesting natural and environmental samples of various matrix. High pressure and temperature environment in the digestion vessels ensures complete dissolution of even very resistant phases which are otherwise tedious to digest in open vessel acid dissolution.

Marine Aquarium Facility for Neontological Experiment

We have established a Marine aquarium facility in Ecological Field Station. This facility has two synthetic salt-water aquariums, with temperature and chemical buffering. This facility would be used for experimenting to fulfil the following objectives:

a. Morphological and behavioral study of live molluscs in response to various ecological and environmental triggers.

b. Isotopic study of molluscan shells that have been produced under controlled environment.

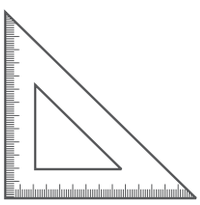
Image Analysis Facility

We have developed an image analysis facility equipped with high power camera and digitization softwares. This facility is primarily used for the following objectives:

a. Detailed documentation of fossil specimens. Such documentation is essential for taxonomic classification.

b. Detailed analysis of size and shape of individual specimens. Such morphometric analysis is important to study evolutionary trends in deep time.

3.1.4 Department of Mathematics and Statistics



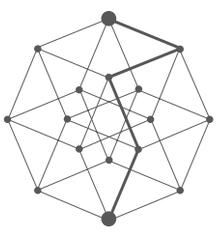
The year 2012-2013 took off right where the previous year came to its end, in a cheerful and optimistic mode. The department had its first PhD student graduated. Seven students completed the BS-MS Programme in Mathematical Sciences, all pursuing their career in premier places now. The Department currently has eleven faculty members, thirteen BS-MS, four Integrated PhD and six PhD students.

Last year saw some significant academic reforms both at the level of the Department and that of the Institute. The notion of pre-majors was introduced in the BS-MS programme where a student at the second year selects three subjects, known as pre-majors, out of the five that are taught at the first year. The major subject is chosen out of the pre-majors at the third year. The mathematics major programme took a good step forward with its curriculum thoroughly spruced up. Two new courses were introduced in the first year, four in the second and one each in the third and fourth. During the last one year, the Department of Mathematics and Statistics offered thirty-one courses with nineteen to teach in the coming semester. Separate courses for Integrated PhD and PhD students are majorly in the pipeline.

Apart from the regular teaching programme which borderlines on being somewhat heavy due to the relatively smaller size of the department and the diverse bouquet of courses it offers, faculty members of the department are actively engaged in research and published some high quality work in premier journals and won laurels for their work in the last year.

In addition to the regular weekly colloquium, the Department honoured its existence through the celebration of its first Department Day on March 14-15, 2013. It was a two-day meet that included some of the best known experts in their fields. Faculty members and students of the department presented their works in the meet as well.

3.1.5 Department of Physical Sciences



The year 2012–2013 saw the passing out of the second batch of physics major students, twelve in number, who overwhelmingly chose research as their career. They joined the doctoral programs of universities and institutes, both in India and abroad. This year also saw graduation of three doctoral students, who secured the Commonwealth fellowship and postdoctoral positions. Dr. Barun Majumdar obtained a faculty position at IIT Gandhinagar based on his remarkable achievement of publishing seven single author papers in international journals of repute. The physics doctoral program got further strengthened with the joining of new students, having CSIR and other fellowships. The Integrated PhD (IPhD) programme also got a boost in number.

The course structure saw a thorough revamping, with a large numbers of elective courses being offered to provide more choice to BS-MS, IPhD and Doctoral students. Interdisciplinary courses in bio-physics and dynamical systems attracted students from other areas to the physics class room. The Department organized a meet on “Field theory and its Applications”, the biennial meet of Indian Society of Atomic and Molecular Physics and also the “Physics Department Day”, with a special tribute to the research work of our colleague Prof. Amitava Datta. The three meetings attracted eminent physicists like Profs. M. Berry, G.S. Agarwal, G. Rajsekaran, A. Raychaudhuri, S. Panda and many others to the “green abode” of IISER Kolkata. The Department was visited by many young researchers for regular seminar presentation, leading to active collaboration of the DPS members with some of them. This year also saw high quality research work emanating from the research laboratories of IISER Kolkata in the areas of optics, material sciences, and quantum computation, at par with the quality research work of the theoreticians.

The Department currently consists of twenty-seven faculty members, two scientific officers and one IISER fellow. The research activity of the Department covers a broad spectrum of disciplines such as gravitation and cosmology, particle physics, solar astrophysics and space sciences, condensed matter physics, atomic molecular and atomic physics and biophysics to mention a few.

New Important Experimental Facilities Introduced

Arc Melting Furnace

The high-temperature bottom arc melting furnace is used for melting materials with high melting point by arcing under controled inert Argon atmosphere. It is primarily used for synthesis of high purity compounds and alloys of desired stoichiometry.

Tunable Femtosecond Amplifier Laser System

This experimental facility comprises of a diode-pumped, Ti:sapphire seeded regenerative amplifier (100-250 kHz) laser which, in turn, feeds two optical parametric amplifiers (OPAs). This system produces short laser pulses (<45 femtosecond) whose wavelength can be tuned from 400 nm to 3 microns. By synchronizing pulses from each of these lasers enabled us to construct a time-

resolved ultrafast spectroscopy that can have pump and probe energies from ultraviolet to mid-infrared. Furthermore, we have a terahertz time-domain spectroscopy (THz-TDS) system for material characterization (such as molecules, dielectrics, correlated systems etc) which directly uses laser pulses from the regenerative amplifier. The THz-TDS when synchronized with OPAs will allow to perform time-resolved measurements in the far-infrared. Additionally, we will make use of terahertz spectroscopy for imaging studies in soft condensed matter systems.

Spectrally-resolved Pump-probe Differential Reflectivity Setup

This is a custom designed and assembled setup capable of spectrally-resolved spectroscopy to investigate energy and momentum relaxation dynamics of various quasiparticles in picosecond to nanosecond time-domain in semiconductor nanostructures in the temperature range of 4-300 K.

Spectrally-resolved Excitation Correlation Setup

This setup is capable of investigating nonlinear behavior in carrier relaxation and recombination dynamics in semiconductor nanostructure through nonlinear photoluminescence.

3.2 Sponsored Research

Department	Sanctioned Amount (Rs.)	Grant Received during the FY 2012-2013 (Rs.)
Department of Biological Sciences	17,21,61,090.00	2,92,39,470.78
Department of Chemical Sciences	8,77,53,450.00	2,08,32,806.00
Department of Earth Sciences	4,60,21,723.00	54,25,321.00
Department of Mathematics and Statistics	74,50,000.00	14,44,000.00
Department of Physical Sciences	8,20,14,360.00	45,40,000.00

Department of Biological Sciences

Projects Funded by National Agencies

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Grant Received during the FY 2012-2013 (Rs.)
1.	Understanding aggression and its correlates in the Indian feral dog Canis familiaris (Sanctioned Amount : Rs. 1,50,000.00)	Anindita Bhadra	INSA	01.08.2010 to 31.07.2013	0.00
2.	Behavioural ecology of the Indian stray dog (Sanctioned Amount : Rs. 18,00,000.00 (approx))	Anindita Bhadra	CSIR	10.05.2010 to 09.05.2013	0.00
3.	Understanding the cellular consequences of Axonal loss and demyelination in viral infection in vitro myelination system (Sanctioned Amount : Rs. 7,56,000.00)	Jayasri Das Sarma	CSIR	09.03.2011 to 08.03.2014	4,37,500.00
4.	Understanding the mechanisms of viral induced axonal loss and demyelination in an experimental animal model (Sanctioned Amount : Rs. 46,13,024.00)	Jayasri Das Sarma	DBT	12.10.2011 to 11.10.2014	0.00
5.	Development of an unique animal model to understand the etiology of human central nervous system autoimmune disease multiple sclerosis (MS) (Sanctioned Amount : Rs. 29,94,012.00)	Jayasri Das Sarma	DBT	01.04.2012 to 31.03.2017	0.00

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Grant Received during the FY 2012-2013 (Rs.)
6.	Studies on the mechanisms of the translational regulation of the cold shock response genes in human entero-pathogenic bacteria (Sanctioned Amount : Rs. 18,89,000.00)	Partha Pratim Datta	DBT	21.07.2011 to 20.07.2014	3,82,000.00
7.	Meiobentic studies in three olive ridley turtle rookeries along the coast of Orissa (Sanctioned Amount : Rs. 12,23,500.00)	Punyasloke Bhadury	DGH, Ministry of Petroleum through Wildlife Institute of India (WII)	01.10.2009 to 31.12.2011 (Ext. upto 30.04.2012)	1,98,000.00
8.	Barcoding Southern Ocean nematodes : an integrated approach to test hypotheses of marine nematode diversity (Sanctioned Amount : Rs. 16,58,000.00)	Punyasloke Bhadury	MoES	08.07.2011 to 07.07.2012	16,58,000.00
9.	Study of benthos of selected sites of coastal Konkan (Sanctioned Amount : Rs. 3,51,000.00)	Punyasloke Bhadury	Bombay Natural History Society (BNHS, India)	06.03.2012 to 07.03.2013	1,39,927.00
10.	Taxonomy and barcoding of marine nematodes (Sanctioned Amount : Rs. 60,00,000.00)	Punyasloke Bhadury	MES	01.10.2012 to 30.09.2017	9,30,000.00
11.	Role of formin in neurite initiation and synapse formation (Sanctioned Amount : Rs. 40,10,000.00)	Sankar Maiti	DBT	23.11.2011 to 22.11.2014	0.00
12.	Functional analysis and regulation of dishevelled in planer cell polarity pathway (Sanctioned Amount : Rs. 1,50,000.00)	Sankar Maiti	CSIR	14.02.2012 to 13.02.2015	0.00
13.	The role of small-RNA pathways in plant defense against insect herbivores (Sanctioned Amount : Rs. 68,00,000.00 (approx.))	Shree Prakash Pandey	DST and Max Planck Institute for Chemical Ecology	01.08.2011 to 31.07.2015	14,41,000.00

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Grant Received during the FY 2012-2013 (Rs.)
14.	Indo German DST MPG (Max Planck Society) Partner Group (PG) on Chemical Ecology (Plants-insect interaction) (Sanctioned Amount : Rs. 37,27,680.00)	Shree Prakash Pandey	DST	01.08.2011 to 31.07.2014	0.00
15.	Engineered Nature Inspired Hybrid Nanomedicine for Wound Healing (Sanctioned Amount : Rs. 22,92,000.00)	Rituparna Sinha Roy	CSIR	30.01.2013 to 29.01.2016	8,35,000.00
16.	Behaviour and Inter-Colony Dynamics in a Queenless Ant (Sanctioned Amount : Rs. 14,70,000.00)	Sumana Annagiri	DST	16.05.2012 to 15.05.2015	7,00,000.00
17.	Engineering Enzymes to overcome biomass recalcitrance. (RGYI). (Sanctioned Amount : Rs. 50,60,000.00)	Supratim Datta	DBT	11.01.2013 to 10.01.2016	29,11,200.00

Projects under Fellowships/Awards

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Grant Received during the FY 2012-2013 (Rs.)
1.	Molecular intersections in the Post-transcriptional regulations of inflammatory gene expression (Sanctioned Amount : Rs. 3,38,57,714.00)	Partho Sarothi Ray	Wellcome Trust DBT India Alliance	01.05.2011 to 30.04.2016	37,91,228.00
2.	Cellular and molecular dynamics of direction-sensing in collective cell migration (part of Ramalingaswami Fellowship 2009-2010) (Sanctioned Amount : Rs. 73,60,000.00)	Mohit Prasad	DBT	01.04.2010 to 31.03.2015	14,30,000.00

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Grant Received during the FY 2012-2013 (Rs.)
3.	Ramalingaswamy Fellowship (Sanctioned Amount : Rs. 74,42,500.00)	Rituparna Sinha Roy	DBT	02.05.2011 to 01.05.2016	15,72,500.00
4.	Ramalingaswamy Fellowship (Sanctioned Amount : Rs. 74,50,000.00)	Rupak Datta	DBT	01.06.2011 to 31.05.2016	14,90,000.00
5.	ICT-DBT Energy Bioscience Overseas Fellowship (Sanctioned Amount : Rs. 70,00,000.00)	Supratim Datta	DBT	01.09.2011 to 31.08.2016	14,00,000.00
6.	Financial assistance for the award of Ramanujan Fellowship (Sanctioned Amount : Rs. 73,00,000.00)	Bidisha Sinha	DST	25.07.2012 to 24.07.2017	14,60,000.00
7.	Financial assistance for the award of Ramanujan Fellowship Sanctioned Amount : Rs. 73,00,000.00)	Guha Dharmarajan	DST	30.08.2012 to 29.08.2017	14,60,000.00

Projects transferred from other Institutes

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Grant transferred from other Institutes during FY 2012-2013 (Rs.)
1.	To expand and differentiate pancreatic progenitor population from human bone marrow and Wharton's jelly derived mesenchymal stem cells and to compare their gene expression profile (Sanctioned Amount : Rs. 14,41,000.00)	Malancha Ta	DST	01.02.2010 to 31.01.2013	1,11,005.78

Project Funded by International Agencies

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Grant Received during the FY 2012-2013 (Rs.)
1.	Direct oligodendrocyte infection by mouse hepatitis virus midiates demyelination (Sanctioned Amount : Rs. 11,20,380.00)	Jayasri Das Sarma	The Children's Hospital of Philadelphia Research Institute (CHOP)	01.11.2009 to 30.09.2013	0.00
2.	Deciphering phytohormone signaling in modulation of resistance to spot blotch disease for identification of novel resistance components for WHEAT improvement (Sanctioned Amount : Rs. 69,45,280/- appox (USD 128000)	Shree Prakash Pandey	CIMMYT	01.08.2012 to 31.07.2013	54,01,828.00
3.	Arsenic biogeochemical cycling in groundwater aquifers of the Bengal Delta Plains (West Bengal, India): Early detection and remediation issues (Sanctioned Amount : Rs. 4,00,00,000.00 (approx)	Punyasloke Bhadury (Co-PI) [PI- Joyanto Routh, Linkoping University, Sweden]	Swedish Research Links Program	1.1.2010 to 31.12.2013	14,90,282.00

Department of Chemical Sciences

Projects Funded by National Agencies

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Grant Received during the FY 2012-2013 (Rs.)
1.	Metal complexes of nitrogen mustard derivatives as nucleases and anticancer agents (Sanctioned Amount : Rs. 25,67,000.00)	Arindam Mukherjee	DST	23.02.2011 to 22.02.2014	7,00,000.00
2.	Transition metal polynuclear complexes of multidentate ligands as molecular magnets (Sanctioned Amount : Rs. 4,00,000.00)	Arindam Mukherjee	CSIR	01.07.2011 to 30.06.2014	2,67,755.00
3.	Dynamics of water dissociation on metal surfaces and on nano-particles (Sanctioned Amount : Rs. 13,45,000.00)	Ashwani Kumar Tiwari	DST	29.12.2011 to 28.12.2014	0.00
4.	Synthesis hexasaccharide repeating unit of the O-antigen from E. coil 035 and tetrasaccharides related to the capsular polysaccharide repeating unit of vibrio cholerate serogroup 031 NRT36S (Sanctioned Amount : Rs. 10,00,000.00 (approx))	Balaram Mukhopadhyay	CSIR	14.07.2010 to 13.07.2013	5,50,965.00
5.	Synthesis of the oligosaccharides related to the repeating units of the O-antigens from shigella boydii Type-16 and Type-17 and futher vaccine designing (Sanctioned Amount : Rs. 22,65,000.00)	Balaram Mukhopadhyay	DST	04.01.2010 to 31.03.2013	3,00,000.00

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Grant Received during the FY 2012-2013 (Rs.)
6.	Crystal engineering of biotin (vitamin B7) co-crystals (Sanctioned Amount : Rs. 19,40,000.00)	C. Malla Reddy	DST	20.04.2010 to 19.04.2013	0.00
7.	Molecular recognition and self-assembly of chromophore based smart materials : a novel sensor (Sanctioned Amount : Rs. 19,86,000.00)	Debashish Haldar	DST	13.04.2010 to 12.04.2013	3,35,000.00
8.	Peptide based self-assembled systems as delivery vehicles and controlled release (Sanctioned Amount : Rs. 12,50,000.00)	Debashish Haldar	CSIR	27.06.2011 to 26.06.2014	2,24,507.00
9.	Theoretical and computational study of opto-electronic and charge transport properties in quantum systems (Sanctioned Amount : Rs. 19,43,000.00)	Mousumi Das	DST	18.08.2010 to 17.08.2013	1,50,000.00
10.	Pt-group metal complexes with substituted biopyridine : DNA-binding agents to sensing materials (Sanctioned Amount : Rs. 19,45,000.00)	Parna Gupta Bhattacharyya	DST	01.03.2010 to 28.02.2013	0.00
11.	Eu(II)/Os(II)-sugar complexes as pet biosensors of lectins and potential therapeutics (Sanctioned Amount : Rs. 11,20,000.00)	Parna Gupta Bhattacharyya	CSIR	06.02.2012 to 05.02.2015	0.00
12.	Design and synthesis of amino acid based macromolecular architectures (Sanctioned Amount : Rs. 41,47,000.00)	Priyadarsi De	DST	18.03.2011 to 17.03.2014	5,00,000.00

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Grant Received during the FY 2012-2013 (Rs.)
13.	Green synthesis of novel degradable polyperoxides (Sanctioned Amount : Rs. 7,00,000.00)	Priyadarsi De	CSIR	30.08.2011 to 29.08.2014	1,25,787.00
14.	Polymer Chains with Inorganic Nano Objects (Sanctioned Amount : Rs. 19,40,000.00)	Priyadarsi De	DRDO	03.10.2012 to 02.10.2015	10,20,000.00
15.	Computational study of diffusion in nanoporous media and in liquids (Sanctioned Amount : Rs. 18,55,000.00)	Pradip Kumar Ghorai	DST	26.07.2010 to 26.07.2013	1,50,000.00
16.	Turn on sensors for arsenic threats in drinking water (Sanctioned Amount : Rs. 13,50,000.00)	Raja Shunmugam	DST	24.11.2009 to 23.11.2012	0.00
17.	Flurorometric sensor for cadmium in drinking water (Sanctioned Amount : Rs. 46,06,400.00)	Raja Shunmugam	DST	04.01.2011 to 03.01.2013 (Ext. upto 03.06.2013)	7,00,000.00
18.	Contractors for Acquisition of Research Services (CARS) (Sanctioned Amount : Rs. 9,50,000.00)	Raja Shunmugam	DRDO	23.09.2011 to 22.09.2012	95,000.00
19.	Development of Nanoscale Conducting Polymers for Field Effect Transistor and Facility Set up at NPOL (Sanctioned Amount : Rs. 9,60,000.00)	Raja Shunmugam	DRDO	04.02.2013 to 03.02.2014	2,88,000.00
20.	Sensing of chemical warfare agents with naobornene based polymers (Sanctioned Amount : Rs. 17,47,000.00)	Raja Shunmugam	DRDO	01.05.2011 to 30.04.2014	0.00

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Grant Received during the FY 2012-2013 (Rs.)
21.	Development of cyclopental[c]heterol-based conjugated systems for Dye-Sensitized Solar Cells (DSSCs) (Sanctioned Amount : Rs. 31,29,600.00)	Sanjio Shankarrao Zade	DST	26.10.2010 to 25.10.2013	8,43,840.00
22.	Poly(Cyclopenta[c] Chalcogenophene) and Related Polymers : Synthesis and Applications in Bulk Heterojunction Organic Photovoltaic Devices (Sanctioned Amount : Rs. 27,29,000.00)	Sanjio Shankarrao Zade	DRDO	01.04.2012 to 31.03.2015	12,70,000.00
23.	Development of photochromic molecules as molecular switches for potential application in logic devices with photonic inputs and outputs (Sanctioned Amount : Rs. 30,90,000.00)	Subhajit Bandhopadhyay	DST	07.10.2011 to 06.10.2014	0.00
24.	Design and synthesis of heterometallic catalysts : olefin polymerization, copolymerization and tandem catalysis (Sanctioned Amount : Rs. 19,44,000.00)	Swadhin K. Mandal	DST	13.04.2009 to 12.04.2012	0.00
25.	Design and synthesis of green catalysts for hydroamination reactions (Sanctioned Amount : Rs. 12,80,000.00 (approx))	Swadhin K. Mandal	CSIR	23.07.2010 to 22.07.2013	3,04,588.00
26.	Template assisted synthetic methods to develop new luminescent nanoarchitecture and their applications (Sanctioned Amount : Rs. 36,80,000.00)	Venkataraman Mahalingam	DST	09.03.2011 to 08.03.2014	8,00,000.00

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Grant Received during the FY 2012-2013 (Rs.)
27.	Understanding the mechanisms of important transition-metal catalyzed chemical transformations : A computational investigation (Sanctioned Amount : Rs. 24,95,000.00)	Debasis Koley	DST	09.07.2012 to 08.07.2015	20,80,000.00
28.	Spectral and temporal fluorescence studies of red emitting dyes in tris (pentafluoroethyl) trrifluorophosphate (FAP) anion containing Imidazolium room temperature ionic liquids (Sanctioned Amount : Rs. 24,95,000.00)	Prasun Kumar Mandal	DST	22.05.2012 to 21.05.2015	18,55,000.00
29.	Seleno and Telluro salen type ligands : Complexation with transition metals and study of the catalytic properties of the complexes (Sanctioned Amount : Rs. 26,80,000.00)	Snigdha Panda	DST	23.05.2012 to 22.05.2015	9,50,000.00
30.	Probing the phenomenon of interaction between lipids and surfactants using Fluorescence Spectroscopy (Sanctioned Amount : Rs. 16,50,000.00)	Pradipta Purkayastha	CSIR	15.01.2013 to 14.01.2016	9,00,000.00
31.	Nanosystem based host-quest chemistry : Charecterization using fluorescence spectroscopy (Sanctioned Amount : Rs. 4,84,000.00)	Pradipta Purkayastha	DST	25.07.2012 to 24.07.2015	37,50,000.00

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Grant Received during the FY 2012-2013 (Rs.)
32.	Magnetic and Mossbauer spectroscopic studies of exchange biased nano-structures (Sanctioned Amount : Rs. 16,92,000.00)	Sayan Bhattacharyya	CSIR	15.01.2013 to 14.01.2016	2,82,000.00
33.	Oxometalate based reactor-on-A-glass slide (RAG) using Colloid and Opto-chemistry (Sanctioned Amount : Rs. 20,84,600.00)	Soumyajit Roy	DST	22.08.2012 to 21.08.2015	8,08,000.00

Project under Fellowship/Awards

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Grant Received during the FY 2012-2013 (Rs.)
1.	Financial assistance for award of Ramanujan Fellowship (Sanctioned Amount : Rs. 73,00,000.00)	Raja Shunmugam	DST	14.07.2010 to 13.07.2015	8,00,000.00

Consultancy Projects

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Grant Received during the FY 2012-13 (Rs.)
1.	On development of thermo-resistant, high-stress and high-tensile strain resistant materials for safes (Sanctioned Amount : Rs. 23,29,800.00)	Soumyajit Roy	Gunnebo India Private Limited	01.12.2011 to 30.11.2014	0.00

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Grant Received during the FY 2012-13 (Rs.)
2.	Photophysical & Photochemical Studies of UV-Absorbing Molecules (Sanctioned Amount : Rs. 10,43,150.00)	Pradipta Purkayastha	Unilever	27.12.2012 to 26.12.2013	2,60,788.00
3.	Photostable photochromatic UV-responsive molecules (Sanctioned Amount : Rs. 10,43,150.00)	Subhajit Bandhopadhyay	Unilever	27.12.2012 to 26.12.2013	2,60,788.00
4.	Carbohydrate chemistry : Application in Foods (Sanctioned Amount : Rs. 10,43,150.00)	Balaram Mukopadhyay	Unilever	27.12.2012 to 26.12.2013	2,60,788.00

Project Transferred to other Institutes

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Grant Received during the FY 2012-2013 (Rs.)
1.	A diversity oriented synthetic approach toward functionalized thiazoles (Sanctioned Amount : Rs. 18,90,000.00)	Jyotirmayee Dash	DST	01.04.2010 to 31.03.2013	0.00
2.	Design synthesis and structural basis of G-qouadruplex DNA binding small molecules (Sanctioned Amount : Rs. 9,75,000.00 (approx))	Jyotirmayee Dash	CSIR	14.07.2010 to 13.07.2013	0.00
3.	Differential recognition of G-Quadruplex DNA binding small molecules using dynamic combinatorial chemistry (Sanctioned Amount : Rs. 66,79,600.00)	Jyotirmayee Dash	DBT	19.12.2011 to 18.12.2014	0.00

Department of Earth Sciences

Projects Funded by National Agencies

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Grant Received during the FY 2012-2013 (Rs.)
1.	Calcretes on metamorphosed rocks of the precambrian Eastern Ghats mobile belt, Orissa: genesis and implications to climate (Sanctioned Amount : Rs. 18,00,000.00)	Prasanta Sanyal	CSIR	06.07.2011 to 05.07.2014	0.00
2.	Investigation of trace metal geochemistry anthropogenic inputs in the Ganga (Hooghly) river estuary (Sanctioned Amount : Rs. 84,56,000.00)	Tarun Kumar Dalai	MES	02.04.2009 to 01.04.2014	0.00
3.	Lode gold mineralization in the southern granite terrain, Kerala : geochemical and petrological constraints on their genesis (Sanctioned Amount : Rs. 2,10,000.00)	Ravikant Vadlamani	DST	29.11.2010 to 28.11.2013	0.00
4.	Response of molluscan community to climate variation : A case study from Miocene of kutch (Sanctioned Amount : Rs. 26,00,000.00)	Devapriya Chattopadhyay	DST	26.03.2013 to 25.03.2016	12,30,000.00
5.	Stable isotope tracing of Oligocene atmospheric pCo2 concentration from Himalayan foreland : implications to tectonics-climate connection (Sanctioned Amount : Rs. 5,40,000.00)	Melindra Kumar Bera	DST	16.05.2012 to 15.05.2012	3,40,000.00

Projects under Fellowship/Awards

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Grant Received during the FY 2012-2013 (Rs.)
1.	Financial assistance for the award of Ramanujan Fellowship (Sanctioned Amount : Rs. 73,00,000.00)	Sutapa Bose	DST (SERB)	16.12.2011 to 15.12.2016	0.00
2.	Financial assistance for award of J C Bose Fellowship to Prof. Somanath Dasgupta, IISER, Kolkata (Sanctioned Amount : Rs. 1,21,10,000.00)	Somnath Dasgupta	DST	02.07.2007 to 01.07.2017	0.00
3.	INSPIRE Faculty Award (Sanctioned Amount : Rs. 86,27,423.00 (approx))	Argha Banerjee	DST	01.02.2013 to 31.01.2018	19,00,000.00

Project transferred from other Institute

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Grant Received during the FY 2012-2013 (Rs.)
1.	Chemical weathering of black shales : Implications for release of Co_2 to the atmosphere and trace metals to the rivers (Sanctioned Amount : Rs. 19,84,000.00)	Tarun Kumar Dalai	DST	02.04.2009 to 01.04.2012 (Ext. upto 02.04.2013)	2,00,000.00

Projects Funded by International Agencies

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Grant Received during the FY 2012-2013 (Rs.)
1.	Effective teaching practices in modern paleobiology using museum and laboratory specimens (Sanctioned Amount : Rs. 2,64,300.00 approx (£ 3000))	Devapriya Chattopadhyay	UKIERI	27.11.2012 to 31.08.2013	2,64,300.00
2.	Seismic velocity structure of the north-western and north-eastern Himalaya and its implications for earthquake hazard assessment (Sanctioned Amount : Rs. 21,30,000.00)	Supriyo Mitra	UKIERI	01.03.2012 to 01.03.2014	14,91,021.00

Department of Mathematics and Statistics

Project under Fellowship/Awards

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Grant Received during the FY 2012-2013 (Rs.)
1	Ramalingaswamy Fellowship (Sanctioned Amount : Rs. 74,50,000.00)	Koel Das	DBT	06.12.2011 to 05.12.2016	14,44,000.00

Department of Physical Sciences

Projects Funded by National Agencies

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Grant Received during the FY 2012-2013 (Rs.)
1.	Electrical conductivity measurements of silicate minerals and transition metal oxides at high presurres and temperatures and its implications (Sanctioned Amount : Rs. 28,81,000.00)	Goutam Dev Mukherjee	DST	21.04.2010 to 20.04.2013	0.00
2.	Physical properties of elemental solids, their compounds and oxides, and mineral phases at extereme conditions of pressure and temperatures an experimental and theoritical study (Sanctioned Amount : Rs. 6,00,15,360.00)	Goutam Dev Mukherjee	MoES	13.07.2011 to 12.07.2016	0.00
3.	Linear and nonlinear optical study of Er-doped ZnO nanocrystals and thinfilms (Sanctioned Amount : Rs. 1,50,000.00)	Bipul Pal	INSA	10.05.2010 to 09.05.2013	0.00
4.	Time resolved nonlinear optical spectroscopy in transition-metal-doped ZnO nanoparticles and thinfilms (Sanctioned Amount : Rs. 19,44,000.00)	Bipul Pal	DST	01.06.2012 to 31.05.2015	15,70,000.00
5.	Study of electronic structure of strongly correlated systems by X-ray Emission Spectroscopy (Sanctioned Amount : Rs. 24,24,000.00)	Satyabrata Raj	DST	25.07.2012 to 24.07.2015	19,70,000.00

Projects under Fellowship/Awards

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Grant Received during the FY 2012-2013 (Rs.)
1.	Financial assistance for the award of Ramanujan Fellowship to Dr. Dibyendu Nandi at Indian Institute of Science Education & Research, IISER, Kolkata (Sanctioned Amount : Rs. 73,00,000.00)	Dibyendu Nandi	DST	01.08.2009 to 31.07.2014	0.00
2.	Financial assistance for award of Ramanujan Fellowship to Dr. Siddhartha Lal (Sanctioned Amount : Rs. 73,00,000.00)	Siddhartha Lal	DST	20.10.2010 to 19.10.2015	10,00,000.00

3.3 Equipments Procured

The Institute procured the following scientific instruments in the reporting period to give impetus to the research activities undertaken by its faculty members, research scholars and students.

SL. No.	Item	Supplier
1.	Thermo Brand Nanodrop 2000 Soectrophotometer with All Standard Accessories	Thermo Electron Scientific Instrument LLC, Madison, USA
2.	Minivertical and Minihorizontal Electrophoresis System with All Standard Accessories	Bio Rad Pacific Limited, West Land Road, Hong Kong
3.	Gratings, Calibrated Turret Model: ARC-500-483-Cal and USB Caliberation Light Source Model: ARC USB-Hg / Ne Ar with All Standard Accessories	Princeton Instruments, Quakerbridge Road, Trenton, USA
4.	ProEM CCD Detector 512B Eccelon Model 8244-00001-7555-0005 with All Standard Accessories	Princeton Instruments, Quakerbridge Road, Trenton, USA
5.	Dell High Performance Computing Cluster with All Standard Accessories	Dell Global B.V. Singapore Branch, Haw Par Centre, Singapore
6.	ILMVAC Three Stage Chemically Resistant Oil Free Diaphragm Pump Model: MPC601Tp with All Standard Accessories	ILMVAC GmbH, Ilmenau, Germany
7.	Variable Wavelength Absorbance Detector, Eluent Generator, Electro Chemical Detector Assembly with All Standard Accessories	Ameritech Scientific Corporation, Irvine, USA
8.	Celsius R920 Computer Workstation with All Standard Accessories	Redington Distribution Pte. Ltd., Singapore
9.	Dual 16K Multichannel Bufer with Meastro-32 Oftw, Constant Fraction Differtial Discrimanator/SCA, Time To Amplitude Converter etc.	Advancetech International FZE, Sharjah, UAE
10.	Manual Variable Leak Valves with All Standard Accessories	Brooks Automation Inc., Longmont, USA
11.	Thin Section Preparation Unit with All Standard Accessories	STRUERS A/S, Copenhagen, Denmark
12.	BD FACS Verse Flowcytometer Analyzer with All Standard Accessories	Becton Dickinson Holding Pte. Ltd., Singapore
13.	Sub Boiling Distallation System with All Standard Accessories	Savillex Corporation, USA
14.	Olympus Stereo Zoom Trinocular Mocroscope Model: SZX16 Zoom Ratio 16:1 with All Standard Accessories	Olympus Singapore Pte. Ltd., Singapore
15.	Eppendorf Refrigerated Centrifuge 5810 R with All Standard Accessories	Eppendorf AG, Hamburg, Germany
16.	Galaxy Incubator Model 170R with All Standard Accessories	New Brunswick Scientific Co. Inc., USA
17.	SIMAG Floor Standing Ice Flaking Machine Model: SPR 120 with All Standard Accessories	SIMAG Div. Della Frimint S.p.A., Italy

SL. No.	Item	Supplier
18.	Optical Chopper Model: 3501 with All Standard Accessories	Newport Corporation, USA
19.	Dual Phase Lock In Amplifier Model: SR830, Low Noise Voltage Preamplifier Model: SR560 Current Preamplifier Model: SR570	Stanford Research Systems, USA
20.	Neptune Plus Multicollector ICP Mass Spectrometer and MAT 253 Stable Isotope Mass Spectrometer with All Standard Accessories	Thermo Fisher Scientific, Austria
21.	Type 20/G Cylindrical Envelope Tungsten Ribbon Lamp with All Standard Accessories	National Physics Laboratory, United Kingdom
22.	Microbiological Safety Cabinet Model MSC Advantage 1.2 with All Standard Accessories	Thermo Electron LED GmbH, Germany
23.	Thermo Heraeus CO2 Incubator Model HERAcell 150i with All Standard Accessories	Thermo Electron LED GmbH, Germany
24.	Enhanced Performance Continuous Benchtop Modular Spectroflurometer with All Standard Accessories	Photon Technology International, USA
25.	Computing Cluster System with All Standard Accessories	Netweb Pte. Ltd., Singapore
26.	SW41 Swinging Bucket Rotor Assembly and Bucket Holder Rack with All Standard Accessories	Beckman Coulter International S.A., Switzerland
27.	Gradient Station, Fractionator Tube Holders, Fractionator Accessories, Gradient Forming Attachment etc.	Bio Comp Instruments Inc., Canada
28.	Thermo Fisher Scientific Brand Quantech Base Filter Fluorometer with All Standard Accessories	Thermo Electron Scientific Instruments LLC, USA
29.	Heidolph HEI-VAP Advantage Rotary Evaporator with All Standard Accessories	Heidolph Instruments GmbH & Co. KG, Germany
30.	Pencil Style Calibration Lamp with All Standard Accessories	Newport Corporation, Irvine, USA
31.	Optical Modular Bases with All Standard Accessories	Newport Corporation, Irvine, USA
32.	Polarizing Cube Beam-Splitters, Optical Mirror and Optical Filter Bses with All Standard Accessories	Newport Corporation, Irvine, USA
33.	High Precision Optical Linear Stages with All Standard Accessories	Newport Corporation, Irvine, USA
34.	100W CW Single Mode Ytterbium Fiber Laser System with All Standard Acessories	IPG Laser GmbH, Germany
35.	PerkinElmer 2400 Series II System Elemental Analyzer with All Standard Accessories	Perkin Elmer Singapore Pte. Ltd., Singapore
36.	Electrochemical Analyzer with Electrochemistry S/W with All Standard Accessories	CH Instrument Inc., USA
37.	Spectroelectrochemical Cell Kit	Bas Inc., USA
38.	UV-VIS-NIR Spectrophotometer with All Standard Accessories	Perkin Elmer Singapore Pte. Ltd., Singapore
39.	Refrigerated Centrifuge 5430R with All Standard Accessories	Eppendorf AG, Hamburg, Germany
40.	Nikon Trinocular Inverted Microscope Model: TS10-F with All Standard Accessories	Nikon Corporation, Japan
41.	X-Ray Fluorescence Spectrometer with All Standard Accessories	Teknis-Elecsys LLC, USA
42.	Agilis Linear Direct Encoder Fedback and Piezo Motor Controller, Top Plate, Conex Base	Newport Corporation, USA

SL. No.	Item	Supplier
43.	Ep Motion 5070 CP Starter Liquid Handling System with All Standard Accessories	Eppendorf AG, Hamburg, Germany
44.	Eppendorf Refrigerated Centrifuge 5810 R with All Standard Accessories	Eppendorf AG, Hamburg, Germany
45.	Thermo Scientific Revco High Performance Chromatography Refrigerator with All Accessories	Thermo Fisher Scientific (Asheville) LLC, USA
46.	3 Hydrometer to Measure Density in the Range 2-3g and Sodium Poly Tungstate	Sometu, Germany
47.	Spectramax M2e Multi Detection Microplate Readers with Dual Mode Cuvette Ports with Sift Max Pro Software	Molecular Devices LLC, USA
48.	Dynapro Nanostar Dynemic Light Scattering Detector with All Standard Accessories	Wyatt Technology Corporation, USA
49.	Fluroscence Spectrometer Model: FP 8300 with All Standard Accessories	Jasco International Co. Ltd., Japan
50.	ZVB Vector Network Analyzer for the Physics Laboratory	Rohde & Schwarz GmbH & Co. KG., Germany
51.	High Performance Computing Cluster with All Standard Accessories	Netweb Pte. Ltd., Singapore
52.	Plant Growth Chamber with All Standard Accessories	Percival Scientific Inc., USA
53.	Back Illuminated EMCCD with Computer TIRF Microscopy with All Standard Accessories	Photonics Inc., USA
54.	ELMA Ultrasonic Cleaner Model: S180H with All Standard Accessories	ELMA GmbH & Co. KG, Germany
55.	N2 Gas Generator with Integrated Oil Free Compressor Model: NG3/1 with All Standard Acessories	F DGS, France
56.	Fluroscence Microscope with Dark Field with All Standard Accessories	Olympus Singapore Pte. Ltd., Singapore
57.	Tunable Amplified Femtosecond Laser System with All Standard Accessories	Coherent Inc., USA
58.	Nikon Binocular Stereozoom Microscope Model: SMZ 800 with All Standard Accessories	Nikon Corporation, Japan
59.	Buchi Rotavapor R-3/V with Heating Bath & Vacuum Pump and All Standard Accessories	Buchi Labortechnik AG, Switzerland
60.	Rotavapor R-210/V Advanced with Vacuum Pump and All Standard Accessories	Buchi Labortechnik AG, Switzerland
61.	Fluorescence Lifetime Attachment Nano LED 456 + 100nm with All Standard Accessories	Photon Technology International, USA
62.	1 Off Boehler Udriller Rev-1-MK2 A85000 with All Standard Accessories	Easy Lab Technologies Limited, United Kingdom
63.	Nikon Trinocular Microscope Model E20 Anti Fungus Type with All Standard Accessories	Nikon Corporation, Japan
64.	Master Node, Computer Node & Infiniband Switch	Netweb Pte. Ltd., Singapore
65.	Low Variation Optical Table with Pneumatic Isolator and Air Compressor	Newport Corporation, USA

SL. No.	Item	Supplier
66.	Turbo Molecular Drag Pump HiPace 400 including TC400	Pfeiffer Vacuum GmbH, Germany
67.	Olympus Inverted Microscope Model: IX71 with Olympus Planel UIS2 Infinity Corected Optical System	Olympus Singapore Pte. Ltd., Singapore
68.	3500 Genetic Analyzer 8 Capillary System with All Standard Accessories	Life Technologies Holding Pte. Ltd., Singapore
69.	Complete GPC & Static Light Scattering System with All Standard Accessories	Consenxus GmbH, Germany
70.	Nikon Motorized Inverted Research Microscope Model Ti E with All Standard Accessories	Nikon Corporation, Japan
71.	Phywe Instrument for the Physics Laboratory	Phywe Systeme GmbH & Co. KG., Germany
72.	Super Nova System Single Crystal X-Ray Diffractrometer including Super Nova Platform G8910A with All Standard Accessories	Agilent Technologies Singapore Pte. Ltd., Singapore
73.	Olympus Upright Optical Microscope Model BX41M with All Standard Accessories	Olympus Corporation, Japan
74.	ZVA Vector Network Analyzer with All Standard Accessories	Rohde & Schwarz GmbH & Co. KG., Germany
75.	Black Comet Spectrometer Model BLK-C with All Standard Accessories	Stellarnet Inc., Florida
76.	Bruker A 30 9.5 / 12 Electron Spin Resonance Spectrometer with All Standard Accessories	Bruker Biospin International AG, Switzerland
77.	Mass Spectrometer ESI & MALDI with required Chromatography System with All Standard Acessories	Bruker Daltonik GmbH, Germany
78.	CO2 Incubator 150 Litre Capacity with Hot Air Sterilization Model C150 with All Standard Accessories	Binder GmbH, Germany
79.	Plant Growth Chamber with All Standard Accessories	Percival Scientific Inc., USA
80.	Nikon Advanced Trinocular Polarising Microscope Model LV100 POL with All Standard Accessories	Nikon Corporation, Japan
81.	2B Nucleofector Device with All Standard Accessories	Lonza Sales Ltd., Switzerland
82.	Stepone Plus 96 Well Rela Time PCR System with All Standard Accessories	Life Technologies Holding Pte. Ltd., Singapore

3.4 Library

The year of 2012-2013 was significant for the Institute from the perspective of adding new resources by the Library. These resources have helped to give impetus to the Institute's teaching and research programmes. The IISER Kolkata Library have started to subscribe to the *Web of Science*, a renowned bibliographic database (1965 onwards) from this year. Apart from augmenting its resources, akin to the previous year, we have endeavored to develop a strong collection in Mathematics and Statistics. We have placed several renowned series such as *Progress in Mathematics* (Springer), *Springer Monographs in Mathematics*, *Grundlehren der Mathematischen Wissenschften* (Springer) and *Mathematical Surveys and Monographs* (American Mathematical Society) under Standing Order. Additionally, from this year, several new journals on Mathematics have been subscribed to. The Library started to subscribe to some new journals on various other subjects from prominent publishers such as Ecological Society of America, Sage etc. The Library also purchased the Earth Science journal archive from Springer during this time.

During this period, the Library has added 667 printed books to its collection. The total printed book collection now stands at 16024. This year the Library continued to develop its e-book collection by purchasing a sizeable number of titles from several renowned publishers like Cambridge University Press, Springer etc. across the disciplines.

As part of its document delivery service, the Library provided 25166 number of photocopies/printouts to its patrons.

The library is open in all seven days of the week.

Library Hours:

Mohanpur Campus Library

Weekdays: 9.00 to 23.00 hrs.

Saturdays and Sundays: 10.00 to 23.00 hrs.

Main Campus Library

Weekdays: 9.00 to 17.00 hrs.

3.5 Student Enrolment

The following tables provide the details of currently registered students at IISER Kolkata (as on **31st March 2013**)

Doctor of Philosophy Programme

Biological Sciences	Chemical Sciences	Earth Sciences	Mathematical Sciences	Physical Sciences	Total
40	86	9	6	36	177

Integrated MS-PhD Dual Degree Programme

Biological Sciences	Chemical Sciences	Earth Sciences	Mathematical Sciences	Physical Sciences	Total
18	19	1	4	15	57

5 Year BS-MS Dual Degree Programme

1st Year	2nd Year	3rd Year	4th Year	5th Year	Total
111	86	78	82	49	406

PhD Students who have submitted thesis but yet to graduate (as on 31st March, 2013)

Biological Sciences	Chemical Sciences	Earth Sciences	Mathematical Sciences	Physical Sciences	Total
-	3	-	-	2	5

Major-wise distribution for 3rd Year onward BS-MS students

	Biological Sciences	Chemical Sciences	Earth Sciences	Mathematical Sciences	Physical Sciences
3rd Year	17	16	17	7	21
4th Year	12	20	13	5	32
5th Year	8	14	14	1	12

3.6 Graduating Students

Doctor of Philosophy (PhD) Programme:

The following tables provide information about all PhD graduate students from IISER Kolkata until **31st March 2013**.

Biological Sciences	Chemical Sciences	Earth Sciences	Mathematical Sciences	Physical Sciences	Total
1	10	-	1	2	14

List of Graduating Students:

Major: Biological Sciences

Sl.	Fullname	Graduation Date	Current Affiliation
1	Imroze Khan	16-11-2012	Postdoctoral Fellow at National Centre For Biological Sciences, Bangalore

Major: Chemical Sciences

Sl.	Fullname	Graduation Date	Current Affiliation
1.	Soumyajit Das	16-08-2012	Postdoctoral Fellow at National University of Singapore
2.	Arup Mukherjee	07-03-2013	NA
3.	Somnath Dasgupta	01-06-2009	Postdoctoral Fellow at University of Alberta
4.	Bimalendu Roy	01-06-2009	Group Leader at Daichi (Ranbaxy R&D)
5.	Vishal Kumar Rajput	01-06-2009	Group Leader at GVK Bioscience
6.	Santanu Mandal	09-12-2011	Postdoctoral Fellow at Lund University
7.	Priya Verma	09-11-2012	Postdoctoral Fellow at Lund University
8.	Poulami Jana	05-09-2012	Postdoctoral Fellow at Indian Institute of Science, Bangalore
9.	Sibaprasad Maity	27-07-2012	Postdoctoral Fellow at Hebrew University of Jerusalem
10.	Syed Jaffer S	20-10-2011	Postdoctoral Fellow at Seoul National University, South Korea

Major: **Mathematical Sciences**

Sl.	Fullname	Graduation Date	Current Affiliation
1	Suchismita Das	14-12-2012	Postdoctoral Fellow at Indian Statistical Institute, Delhi Center

Major: **Physical Sciences**

Sl.	Fullname	Graduation Date	Current Affiliation
1	Jishad Kumar T. M.	29-03-2012	Postdoctoral Fellow at Charles University in Prague
2	Priyam Das	08-12-2011	Research Fellow at Centre for Quantum Technologies, Singapore

Master of Science by Thesis Programme:

List of Graduating Students:

Sl.	Fullname	Major	Current Affiliation
1	Diptaranjan Das	Physical Sciences	-

5 Year BS-MS Dual Degree Programme

The following tables provide information about the graduate students from IISER Kolkata between the period of **1st April 2012 to 31st March 2013**.

Biological Sciences	Chemical Sciences	Earth Sciences	Mathematical Sciences	Physical Sciences	Total
7	7	29	7	13	63

List of Graduating Students:

Major: **Biological Sciences**

Sl.	Fullname	Current Affiliation
1.	Arunabha Sarkar	PhD Student at NCBS, Bangalore
2.	Narendra Mukherjee	PhD Student at Brandeis University
3.	Mayukh Mondal	PhD Student at Universitat Pompeu Fabra
4.	Sudipta Tung	PhD Student at IISER Pune
5.	Sayantan Das	JRF at University of Mysore
6.	Jyothi V Nair	PhD Student at NCBS, Bangalore
7.	Syed Zeeshan Ali	PhD Student at IISER Mohali

Major: **Chemical Sciences**

Sl.	Fullname	Current Affiliation
1.	Ritu Raj	DPhil Student at University of Oxford
2.	Ravi Kumar	Senior Chemistry Faculty at Prerna Classes, Jamshedpur
3.	Manish Arya	Intern at Shell, Bangalore
4.	Manish Garg	PhD (Physics) Student at University of Ottawa, Canada
5.	Shashi Bhushan Sinha	PhD Student at Yale University
6.	Aditi Chandrasekar	-
7.	Nethi Vamsidhar	-

Major: **Earth Sciences**

Sl.	Fullname	Current Affiliation
1.	Swapnil Vijayrao Fulmali	MBA Student
2.	Deepak Kr Agarwal	Project Assistant at NGRI, Hyderabad
3.	Anukriti Sharma	PhD Student at Rice University
4.	Mayank Gupta	Faculty (Physics) at Bansal Classes Pvt Ltd
5.	Sheikh Mohammad Shakil Hashmi	PhD Student at NGRI Hyderabad
6.	Satyendra Kumar	MTech - Petroleum Geosciences at IIT Bombay
7.	Vikash Kumar	Project Assistant at NGRI, Hyderabad

Sl.	Fullname	Current Affiliation
8.	Saif	-
9.	Ashish Rathie	-
10.	Kumar Pratik Ashok	-
11.	Satyam Kumar	MBA Student at IIM Kashipur, Uttarakhand
12.	Amit Kumar	Executive at Jindal Industry Ltd, Orissa
13.	Vaibhav Mishra	PhD Student at Rice University
14.	Mayur Dhingra	Pursuing MBA at FMS Delhi
15.	Devendra Baghel	Faculty (Physics) at IIT -Study Circle Delhi
16.	Shyam Nandan	PhD Student at ETH Zurich
17.	Prashant Anand	-
18.	Utsav Mannu	Project Assistant at NGRI Hyderabad
19.	Krishna Hara Chakravarty	PhD Student at Technical University of Denmark
20.	Saurav Dutta	Project (Vertebrate Paleontology) at Delhi University
21.	Anwar Mohiuddin	PhD Candidate at Yale University
22.	Badusha Badarudeen	Pursuing MBA at IIM Indore
23.	Ashish Agarwal	-
24.	Nilesh Kumar Jaiswara	JRF at NGRI Hyderabad
25.	Siddharth Sharma	MSc (Exploration Geophysics) at Institute de Physique du Globe de Paris
26	Shiv Shankar	Project Assistant at NGRI Hyderabad
27.	Sudhanshu Pandey	PhD Student at Utrecht University
28.	Rajarshi Roychowdhury	PhD Student at University of Massachusetts
29.	Mohd Yusuf Jameel	PhD Student at University of Utah

Major: **Mathematical Sciences**

Sl.	Fullname	Current Affiliation
1.	Shankhadip Biswas	Job at Northern Lights Studio Pvt. Ltd.
2.	Ashim Dubey	MSc (Economics) at Institute of Advanced Studies, Vienna
3.	Sameer Sunilbhai Desai	JRF Computer Science at ISI Kolkata
4.	Akshay Kumar Singh	Fellow at IIM Bangalore
5.	Antareep Mandal	PhD Student at Humboldt University of Berlin
6.	Madhuri Mallela	-
7.	Shashankaditya Upadhyay	Project Assistant at ISI, Kolkata

Major: **Physical Sciences**

Sl.	Fullname	Current Affiliation
1.	Ankur Shringi	Project Assistant at IISc, Bangalore
2.	Amit Nag	PhD Candidate at University of Maryland
3.	Amit Anand	Pursuing MBA at XLRI, Jamshedpur
4.	Irfan Raza	-
5.	Piyush Pushkar	-
6.	Aniket Patra	PhD Student at Rutgers University
7.	Debashis Sanyal	PhD Student at University of Bonn
8.	Sibasish Banerjee	PhD Student at University of Montpellier, France
9.	Anish Bhardwaj	PhD Student at Florida State University
10.	Debanjan Basu	PhD Student at University of Gottingen
11.	Dibya Chakravorty	Research Assistant at IISER Kolkata
12.	Satish Kumar	PhD Student at University of Texas
13.	Harsh Purwar	Doctoral Student at University du Rouen, France

Seminars & Colloquia 4

4. Seminars & Colloquia

4.1 Department of Biological Sciences

Seminars

Date	Speaker	Title
March 26, 2013	Dr. Ishani Deb Department of Neurology University of New Mexico, USA	Tyrosine Phosphatase STEP: a Potential Target for Protection against Ischemic Brain Damage
March 20, 2013	Dr. Anirban Majumdar Regenerative Bioscience Center University of Georgia, USA	Towards Tissue Representative Models – Derivation of Human Astrocytes from Embryonic Stem Cells
January 16, 2013	Dr. Souvik Kusari Institute of Environmental Research (INFU) Technical University, Germany	Chemical Basis of Cost-benefit Reciprocity of Fungal Endophytes Leading to Biologically Relevant Natural Products
January 9, 2013	Dr. Kenneth S Shindler F.M. Kirby Centre for Molecular Ophthalmology and Scheie Eye Institute University of Pennsylvania, USA	Neuroprotection in Autoimmune and Viral-Induced Optic Neuritis
January 9, 2013	Dr. Anuradha Janakiraman Department of Biology City University of New York, USA	How to Divide a Bacterial Cell
January 9, 2013	Dr. Ranajeet Ghose Department of Chemistry City University of New York, USA	Tyrosine Kinase/Phosphatase Interactions in Bacteria
November 29, 2012	Dr. Krishanu Ray TIFR, Mumbai	Sensory Maturation of Olfactory Cila
November 23, 2012	Dr. Sachin Deshmukh Mind/Brain Institute Johns Hopkins University, USA	Objects, Space, and Memory: How the Hippocampal Cognitive Map Comes Together
November 15, 2012	Prof. L.S. Shashidhara IISER, Pune	Evolutionary Developmental Biology of Insect Wings
November 12, 2012	Dr. Devyani Haldar Institute of Life Sciences University of Hyderabad	Protein Acetylation/Deacetylation in Maintenance of Genomic Integrity

Date	Speaker	Title
September 26, 2012	Dr. Bhaswar Ghosh Computational Systems Biology Lab Ecole Polytechnique Federale de Lausanne Switzerland	Divergent Promoter Architectures Employed by the Co-regulated Budding Yeast Ribosomal Protein Genes
September 10, 2012	Dr. Michael Koval Emory University School of Medicine, USA	Intercellular Junctions: Linking Cells into Integrated Tissues
August 22, 2012	Dr. Roopa Biswas University of Health Sciences Bethesda USA	Regulation of microRNA Expression and mRNA Stability in the Inflammatory Lung Disease Cystic Fibrosis
August 16, 2012	Prof. Aparna Dutta Gupta Department of Animal Sciences School of Life Sciences University of Hyderabad	Ecofriendly Insect Pest Management: Search for New Molecules and Alternate Targets
April 23, 2012	Dr. Varsha Singh Department of Molecular Genetics and Microbiology Duke University Medical Center, USA	Innate Immune Responses to Bacterial Pathogens: Control by Stress Response Pathways and the Nervous System
April 18, 2012	Dr. Abhisekh Ghosh University of Calgary, Canada	"Size Does Matter" - Drosophila Paves the Way via Ribosomes

Conference

"Science Academies' Refresher Course in Experimental Biology for college and University teachers", 19th-31st December, 2012.

(First such Refresher Course in Experimental Biology; held jointly by the three academies of science and IISER Kolkata. Convener : Partho Sarothi Ray).

First Department Day

The Department Day was held on March 6, 2013, where invited scientists of international repute as well as faculty members and students of the Department delivered talks.

Speaker	Title
Prof. Dipankar Chatterji IISc, Bangalore	Molecular Recognition – Specific and Non-specific Complexes
Prof. Renee Borges IISc, Bangalore	Do Ants and Earthworms Pay the Rent for Being Tenants within an Ant-plant?
Prof. Subhash Lakhotia BHU, Varanasi	A Full Understanding of the "Junk" DNA in Genome is Necessary for Biotechnological and Biodiversity Studies
Dr. Robert J Chandran IISER Kolkata	Patterns and Dynamics of Globally Synchronous Response of Tropical Mountain Vegetation to Recent Climate Change

Speaker	Title
Dr. Shree Prakash Pandey IISER Kolkata	Unwiring and Rewiring small-RNA Pathways for Stress Adaptation in Plants and Microbes
Dr. Pallabi Sengupta IISER Kolkata	Graph Theory: Understanding the Human Brain in a Computational Framework
Dr. Anindita Bhadra IISER Kolkata	Selfish Mothers? Parent-offspring Conflict in Indian Free-ranging Dogs
Dr. Jayasri Das Sarma IISER Kolkata	Underlying Neuroinflammatory Mechanism of Viral Induced Demyelination and Axonal Loss
Rajbir Kaur IISER Kolkata	Leader's Specialization in Ants
Dr. Partha Pratim Datta IISER Kolkata	Studies on the Activity of Some Ribosome Associated Factors during Environmental Stress
Debdeep Dasgupta IISER Kolkata	Biofilms : Implication in Bioremediation
Brinta Chakraborty IISER Kolkata	Survival Strategies: An Outcome of Rivalry in Soil Dwelling Bacteria
Dr. Partho Sarothi Ray IISER Kolkata	Integration of Biological Signals at the Molecular Level: Role of microRNAs and RNA-binding Proteins
Anoop K IISER Kolkata	Prior Experience to Predatory Cues Associated with Conspecific Alarm Cues Elicits Enhanced Anti-predatory Response in Tadpoles of *Sphaerotheca Breviceps*
Dhiman Pal IISER Kolkata	A Novel Carbonic Anhydrase from Leishmania Major: Potential Drug Target Against Leishmaniasis

4.2 Department of Chemical Sciences

Seminars

Date	Speaker	Title
February 22, 2013	Dr. G. J. Sanjayan Division of Organic Chemistry National Chemical Laboratory, Pune	Non-bonding Interactions in Foldamers and Other Supramolecular Assemblies
February 19, 2013	Prof. E. Arunan Department of Inorganic and Physical Chemistry Indian Institute of Science, Bangalore	Hydrogen Bonding: From 1920-2010
January 23, 2013	Prof. Nick Norman School of Chemistry University of Bristol, UK	Recent Advances in Low Oxidation State Boron Chemistry

Date	Speaker	Title
January 23, 2013	Prof. Timothy Gallagher School of Chemistry University of Bristol, UK	(a) Escape from Flatland. Chemistry of Cyclic Sulfamidates (b) Exploring Cytisine. Is Chirality Important?
August 16, 2012	Prof. S. Ramakrishnan Department of Inorganic and Physical Chemistry Indian Institute of Science, Bangalore	Conformational Control and Assembly of Polymer Molecules Reinforced by Alkylene Segment Crystallization

Conference

The Department hosted the Tenth Symposium of the Chemical Research Society of India, Kolkata Chapter on August 8, 2012.

First Department Day

The Department Day was held on November 7, 2012, in which, apart from the talks by Departmental members, there was a series of lectures by eminent scientists from all over the country as listed below:

Speaker	Title
Prof. Govindasamy Mugesh Department of Inorganic & Physical Chemistry Indian Institute of Science, Bangalore	Understanding the Chemistry of the Thyroid by Multidisciplinary Approaches
Dr. Sumit Khanra IISER Kolkata	Transition Metal Compounds in Magnetism and Catalysis
Ms. Rituparna Das IISER Kolkata	Carbohydrate Derived Biosensors and Synthesis of Bacterial Oligosaccharides
Mr. M. Sadhukhan IISER Kolkata	The Chemical Bond in Strong Magnetic Fields
Dr. Pradipta Purkayastha IISER Kolkata	Cyclodextrin Host
Dr. C. Malla Reddy IISER Kolkata	Crystal Engineering Approach for the Design of Compliant Organic Materials
Mr. Samaresh Chandra Sau IISER Kolkata	Integrating Organometallic Catalysis with Organocatalysis: A Consecutive Catalytic Approach in One Pot
Mr. Shivshankar Mane IISER Kolkata	Synthesis and Characterization of Amphiphilic Polymers for Drug Delivery
Mr. Vishwas Srivastava IISER Kolkata	Waste is Nano-resource: Energy Transfer Perspective
Dr. Amlan K. Roy IISER Kolkata	Towards a *new* Density Functional Method for Atoms, Molecules in Cartesian Coordinate Grid

Speaker	Title
Mr. Shyam Sarkar IISER Kolkata	Upconversion via Interparticle Energy Transfer in Ultrasmall $BaLuF_5$ Nanocrystals
Mr. Krishnendu Maji IISER Kolkata	Structure and Function of Methionine Containing Peptides
Mr. Arobendo Mondal IISER Kolkata	Effects of Molecular Orientation, Rotation and Vibration on Reactivity of H_2O on Cu (III) Surface

4.3 Department of Earth Sciences

First Department Day

The Department Day was held on March 9, 2013

Speaker	Title
Dr. N.V. Chalapathi Rao BHU, Varanasi	Kimberlites, Xenoliths and Diamonds: Keys for Unraveling Geodynamics of Archean Cratons
Dr. Partha Pratim Chakraborty Delhi University	Depositional Environments, Burial History and Rock Properties - Some Principal Aspects of Clastic and Carbonate Systems
Prof. Pulak Sengupta Jadavpur University	Pseudomorphs as Petrological Indicators - Some Case Studies
Prof. S.S. Rai NGRI, Hyderabad	Nature of the Lower Continental Crust: Indian Perspective

4.4 Department of Mathematics & Statistics

Seminars

Date	Speake	Title
March 20, 2013	Dr. Utsav Choudhury University of Zürich, Switzerland	An Exposition to the Theory of Motives of Deligne-Mumford Stacks
March 13, 2013	Dr. Niloy Ganguly IIT Kharagpur	Alphabetic Bipartite Networks: Theory and Applications
March 8, 2013	Dr. Subhendu Ghosh University of Delhi	Computer, Brain and Music
March 6, 2013	Prof. Debashish Goswami Indian Statistical Institute, Kolkata	Compact Quantum Groups and their Actions
March 5, 2013	Dr. Anandam Banerjee KAIST, Korea	An Introduction to Motive

Date	Speake	Title
February 14, 2013	Dr. Sudarshan Iyengar Department of Computer Science and Engineering IIT Ropar	Connecting the Dots: The Science of Networks
February 14, 2013	Dr. Sudarshan Iyengar Department of Computer Science and Engineering IIT Ropar	Human Problem Solving Strategies on Complex Networks
February 13, 2013	Dr. Swagato K Ray Indian Statistical Institute, Kolkata	On Translates of Powers of Continuous Functions in L^p (R)
February 13, 2013	Dr. Sudarshan Iyengar Department of Computer Science and Engineering IIT Ropar	The Science of Computer Science
February 6, 2013	Dr. Shibananda Biswas Indian Statistical Institute, Kolkata	On Curvature Inequality
November 29, 2012	Dr. Shalabh IIT Kanpur	Simultaneous Prediction in Linear Regression Model
October 17, 2012	Dr. Mithun Mukherjee Ben-Gurion University, Israel	Additive Units of Product Systems
July 25, 2012	Dr. Abhishek Banerjee College de France, France	Connections Between Number Theory and Noncommutative Geometry
July 10, 2012	Dr. Susama Agarwala California Institute of Technology, USA	Some Modern Applications of Combinatorial Hopf Algebras

First Department Day

The Department of Mathematics & Statistics celebrated its First Department Day on March 14-15, 2013, where following external speakers of international repute as well as faculty members and students of the Department delivered talks.

Speaker	Title
Prof. Adimurthi TIFR Centre for Applicable Mathematics Bangalore	Distribution Theory & its Applications
Nil Kamal Hazra IISER Kolkata	Component Redundancy Versus System Redundancy in Different Stochastic Orderings
Prof. Kalyan B Sinha Jawaharlal Nehru Centre for Advanced Scientific Research Bangalore	Trace Mean-value Theorems for Operator Functions of One and Two Self-Adjoint Operators
Dr. Himadri Mukherjee IISER Kolkata	On Toric Divisors of Lattice Varieties

Speaker	Title
Prof. Gadadhar Mishra Indian Institute of Science Bangalore	Bi-holomorphic Invariants
Dr. Veerendra Vikram Awasthi IISER Kolkata	Homology & Dimension: A Question of Eilenberg
Dr. Anirban Banerjee IISER Kolkata	Normalized Graph Laplacian Spectra & Network Structure
Prof. S Kumaresan University of Hyderabad	Tangents: A Geodesic to Differential Geometry
Dr. Koel Das IISER Kolkata	Large Scale Data Analysis in Computational Neuroscience

4.5 Department of Physical Sciences

Seminars

Date	Speaker and Affiliation	Title
March 20, 2013	Dr. Richard Britto Saha Institute of Nuclear Physics (SINP), Kolkata	Dark Matter Evidence and Search with the PICASSO Experiment
March 13, 2013	Prof. Takashi Nakajima Kyoto University, Japan	Nonlinear Optics with Mid-IR Free-electron Laser and Pulse Propagation Dynamics in Metamaterials and Atomic Gas
March 6, 2013	Dr. Debamalya Banerjee Max Plank Institut für Kohlenforschung Muelheim, Germany	Investigating Spin Dynamics with Microwave: Applications in Condensed Matter Physics to Biology
February 13, 2013	Dr. Sourav Ghosh Cambridge University	Anharmonic Acoustic Technique for Detection of Surface-bound Particles
January 15, 2013	Prof Manu Paranjape University of Montreal	Solitons and Instantons in an Effective Model of CP Violation
January 15, 2013	Prof. Richard Mackenzie University of Montreal	Vacuum Decay Mediated by Topological Defects
December 05, 2012	Dr. G.V. Pavan Kumar IISER Pune	Single-Molecule Surface Enhanced Raman Scattering: Bimetallic Core-shells and Isolated Plasmonic Nanowires
November 20, 2012	Prof. Saurabh Basu IIT Guwahati	BCS-BEC Crossover

Date	Speaker and Affiliation	Title
November 02, 2012	Prof. Anand Pathak University of Hyderabad	Channeling of and Channeling Radiation from Energetic Charged Particles in Crystalline Materials- Applications in Defects a Studies
October 31, 2012	Dr. Pushan Majumder Indian Association for Cultivation of Science, Kolkata	Introduction to Lattice Gauge Theory
October 03, 2012	Dr. Srikanth Sugavanam Aston Institute of Photonic Technologies, Aston University Birmingham, UK	Research Activities in the Area of Raman Fiber Lasers at Aston University
September 19, 2012	Dr. Prasad Subramanian IISER Pune	TeV Blazar Variability: the Firehose Instability?
September 12, 2012	Dr. Dipankar Das Inter-University Consortium for DAE Facilities, Kolkata	Mössbauer Spectroscopy : a Hyperfine Technique to Characterize Materials of Diverse Interest
September 5, 2012	Dr. Laurene Jouve University of Toulouse, France	Simulating Our Turbulent Magnetic Sun
August 22, 2012	Dr. Mintu Mondal Tata Institute of Fundamental Research, Mumbai	Effect of Phase Fluctuations Induced by Disorder in a Conventional Superconductor
August 01, 2012	Dr. Uma Kota Institute of Space Science National Central University Jhongli, Taiwan	Wavelet View of Environmental Dynamics
May 17, 2012	Dr. Som Shubhro Bandopadyay Bose Institute, Kolkata	Local Distinguishability of Orthogonal Quantum States
April 04, 2012	Dr. Anjan Barman S.N. Bose Centre for Basic Sciences, Kolkata	All Optical Excitation and Detection of Spin Dynamics in Magnetic Nanostructures

Conference

DAE-BRNS Symposium on Atomic, Molecular and Optical Physics (AMOP) was held during December 14-17, 2012. Around 280 participants attended the conference.

First Department Day

The first DPS Symposium or AD 65 (in honour of Prof. Amitava Datta's 65th birthday) was held during March 16-17, 2013. The speakers included

Speaker	Title
Prof. G Rajsekaran IMSc, Chennai	A Stable Massive Charged Particle
Prof. D. P. Roy TIFR, Mumbai	Dark Matter in SUGRA Models with Nonuniversal Gaugino Masses
Prof. A. Kundu CU, Kolkata	Constraints Coming from Unstable Minima of Supersymmetric Potential
Prof. T R Govindarajan CMI, Chennai	Eta and Theta: EDM and Do We Need Axions ?
Prof. Rahul Sinha IMSc, Chennai	D^0-D^0bar Mixing
Prof. Utpal Sarkar PRL, Allahabad	Astroparticle Physics
Prof. Naba K Mondal TIFR, Mumbai	The World of Elementary Particles
Dr. M. Guchait TIFR, Mumbai	AD and STOP
Dr. S. P. Das Visva-Bharati, Shantiniketan	-
Arghya Choudhury IISER Kolkata	Neutralino Dark Matter Confronted by LHC Data
Kumar Abhinav IISER Kolkata	Fermion Interaction with External Gauge
Basudev Roy IISER Kolkata	Light Induced Bubble Mediated Photo-physical Crystallization
Dyuti Bhattacharya IISER Kolkata	Melting Scenario for Coulomb-interacting Classical Particles in 2D Irregular Confinement
Harkirat Singh IISER Kolkata	Susceptibilitty and Heat Capacity as Entanglement Witness
Soumitra Hazra IISER Kolkata	Realistic Interpretation of Sunspot Eruption within the Framework of Kinematic Solar Dynamo Model
Sanhita Paul IISER Kolkata	Signature of Polaron Formation in Na0.025Wo3: Photoemission of X-ray Diffraction Investigation

Publications 5

5.1 Faculty Publications

5.1.1 Department of Biological Sciences

Journal Articles

Annagiri, Sumana and Sona, Chandan. 2012. "Studies on colony relocation in the Indian queenless ant Diacamma indicum." *Current Science* 102 , 1373 -1374.

Baldeck, Claire A; Harms, Kyle E; Yavitt, Joseph B; **John, Robert;** Turner, Benjamin L; Valencia, Renato; Navarette, Hugo; Davies, Stuart J; Chuyong, George B; Kenfack, David *et al*. 2013. "Soil resources and topography shape local tree community structure in tropical forests." *Proceeding of the Royal Society, London Series B* 280, 1753.

Banerjee, Paromita; Soni, Jalpa; Purwar, Harsh; Ghosh, Nirmalya and **Sengupta, Tapas Kumar**. 2013. "Probing the fractal pattern and organization of Bacillus thuringiensis bacteria colonies growing under different conditions using quantitative spectral light scattering polarimetry." *Journal of Biomedical Optic* 18, 035003. *

Beasley, J C; Olson, Z H; Beatty, W S; **Dharmarajan, G** and Rhodes, Jr., O E. 2013. "Effects of culling on mesopredator population dynamics." *Plos One* 8, e58982.

Bhattacharjee, Dola; Choudhury, Binod C; Sivakumar, Kuppusamy; Sharma, Charu; John, Sajan; Behera, Satyaranjan; Behera, Subrata and **Bhadury, Punyasloke**. 2012. "Benthic foraminifer assemblages in turtle congregation sites along the North East coast of India." *Journal of the Marine Biological Association of the United Kingdom* AOP, 1-11.

Das, Nandan; Chatterjee, Subhasri; Soni, Jalpa; Jagtap, Jaidip; Pradhan, Asima; **Sengupta, Tapas Kumar;** Panigrahi, Prasanta K; Vitkin, I Alex and Ghosh, Nirmalya. 2013. "Probing multifractality in tissue refractive index: prospects for precancer detection", *Optics Letter* 38, 211-213. (Highlighted in Virtual Journal of Biomedical Physics) *

Dasgupta, Debdeep; Ghosh, Ritabrata and **Sengupta, Tapas Kumar**. 2013. "Biofilm Mediated Enhanced Crude Oil Degradation by Newly Isolated Pseudomonas Species." *ISRN Biotechnology* 2013, 2013.

Dharmarajan, G; Beasley, J C; Fike, J A; Raizman, E A; Wu, C C; Pogranichniy, R M and Rhodes, Jr., O E. 2012. "Effects of kin-structure on disease dynamics in raccoons (Procyon lotor) inhabiting a fragmented landscape." *Basic and Applied Ecology* 13, 560-567.

Dharmarajan, G; Beatty, W S and Rhodes, Jr., O E. 2012. "Heterozygote deficits caused by a Wahlund effect: dispelling unfounded expectations." *Journal of Wildlife Management* 77, 226–234.

Hatai, Joydev; Pal, Suman; Jose, Gregor P; **Sengupta, Tapas Kumar** and Bandyopadhyay, Subhajit. 2012. "A single molecule multi analyte chemosensor differentiates among Zn2+, Pb2+ and Hg2+: Modulation of selectivity by tuning of solvents." *RSC Advances* 2, 7033-7036. *

Kaur, Rajbir; K, Anoop and **Annagiri, Sumana**. 2012. "Leaders follow leaders to reunite the colony: relocation dynamics of an Indian queenless ant in its natural habitat." *Animal Behaviour* 83, 1345–1353.

Mane, S R; Rao, N V; Chaterjee, K; Dinda, H; Nag, S; Kishore, A; **Das Sarma, J** and Shunmugam, R. 2012. "Amphiphilic Homopolymer Vesicles as Unique Nano-Carriers for Cancer Therapy." Macromolecules 45, 8037-8042. *

Mane, S R; Rao, N V; Chatterjee, K; Dinda, H; Nag, S; Kishore, A; **Das Sarma, J** and Shunmugam, R. 2012. "A unique polymeric nano-carrier for anti-tuberculosis therapy." *Journal of Materials Chemistry* 22, 19639. *

Rao, N V; Kishore, A; Sarkar, S; **Das Sarma, J** and Shunmugam, R. 2012. "Norbornene-Derived Poly-d-lysine Copolymers as Quantum Dot Carriers for Neuron Growth." Biomacromolecules 13, 2933-2944. *

Zhang, Hui; **John, Robert**; Peng, Zechen; Yuan, Jianli; Chu, Chengjin; Du, Guozen and Zhou, Shurong. 2012. "The Relationship between Species Richness and Evenness in Plant Communities along a Successional Gradient: A Study from Sub-Alpine Meadows of the Eastern Qinghai-Tibetan Plateau, China." *PLos One* 7, e49024.

Book Chapters

Bhadury, Punyasloke. 2013. "Nanotechnology-Application in Biomedical Sciences." In *Modern Biotechnology and its Applications Part II* , edited by Behera, K, NIPA, New Delhi, ISBN: 9789381450833.

Bhadury, Punyasloke. 2012. "Biodiversity of Nematodes in the era of "Omics"." In *Nematodes: Morphology, Functions and Management Strategies*, edited by Boeri, F and Chung, JA, Nova Publishers, ISBN: 9781614707844.

Bhattacharjee, Dola; Samanta, Brajogopal; Danda, Anurag and **Bhadury, Punyasloke**. 2013. "Understanding the Impact of Climate Change in the Sundarbans Aquatic Ecosystem-Phytoplankton as Proxies." In *Climate Change and Island and Coastal Vulnerability*, edited by Sundaresan, J; Sreekesh, S; Ramanathan, A; Sonnenschein, L; Boojih, R. Springer, ISBN: 9789400760158.

Datta, Partha P and Chatterjee, Ananya. 2013. "A Passage through the Ribosome by Cryo-EM." In *Biophysical Approaches to Translational Control of Gene Expression Biophysical Approaches to Translational Control of Gene Expression*, edited by Dinman, Jonathan, D. Springer, ISBN: 9781461439905.

5.1.2 Department of Chemical Sciences

Journal Articles

Arora, H; Barman, S K; Lloret, F and **Mukherjee, R N**. 2012. "Isostructural Dinuclear Phenoxo-/Acetato-Bridged Manganese(II), Cobalt(II), and Zinc(II) Complexes with Labile Sites: Kinetics of Transesterification of 2-Hydroxypropyl-p-nitrophenylphosphate." *Inorganic Chemistry* 51, 5539-5553.

Bag, Partha Pratim and **Reddy, C. Malla**. 2012. "Screening and Selective Preparation of Polymorphs by Fast Evaporation Method: A Case Study of Aspirin, Anthranilic Acid, and Niflumic Acid." *Cryst. Growth Des.* 12, 2740−2743.

Bag, Partha Pratim; Chen, Miles; Sun, Changquan Calvin and **Reddy, C. Malla**. 2012. "Direct correlation among crystal structure, mechanical behaviour and tabletability in a trimorphic molecular compound.", *CrystEngComm* 14, 3865–3867.

Banik, Bhabatosh; Somyajit, Kumar; **Koley, Debasis**; Nagaraju, Ganesh and Chakravarty, Akhil Ranjan. 2012. "Cellular uptake and remarkable photocytotoxicity of pyrenylter pyridine oxovanadium(IV) complexes of dipyridophenazine bases." *Inorganica Chimica Acta* 393, 284-293.

Basu, Uttara; Khan, Imran; **Koley, Debasis**; Saha, Sounik; Kondaiah, Paturu and Chakravarty, Akhil Ranjan. 2012. "Nuclear targeting terpyridine iron(II) complexes for cellular imaging and remarkable photocytotoxicity." *Journal of Inorganic Biochemistry* 116, 77-87.

Bauri, K; Roy, S G; Arora, S; Dey, R K; Goswami, A; Madras, G and **De, P**. 2013. "Thermal degradation kinetics of thermoresponsive poly(N-isopropylacrylamide-co-N,N-dimethylacrylamide) copolymers prepared via RAFT polymerization." *Journal of Thermal Analysis and Calorimetry* 111, 753-761.

Bauri, K; Roy, S Ghosh; Pant, S and **De, P**. 2013. "Controlled Synthesis of Amino Acid-Based pH-Responsive Chiral Polymers and Self-Assembly of Their Block Copolymers." *Langmuir* 29, 2764−2774.

Bedi, Anjan; Senanayak, Satyaprasad P; Das, Soumyajit; Narayan, K S and **Zade, Sanjio S**. 2012. "Cyclopenta[c] thiophene oligomers based solution processable D–A copolymers and their application as FET materials." *Polymer Chemistry* 3, 1453-1460.

Bhattacharya, Sourav; N, Vijaykameswara Rao; Sarkar, Santu and **Shunmugam, Raja**. 2012. "Unusual emission from norbornene derived phosphonate molecule – A Sensor for FeIII in Aqueous Environment.", *Nanoscale*, 4, 6962-6966.

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Chaudhuri, Debangshu *et al* 2012. "Plasmonic surface enhancement of dual fluorescence and phosphorescence emission from organic semiconductors: effect of exchange gap and spin–orbit coupling." *Chemical Communications* 48, 6675-6677.

Das, Anindita; Molla, Rahaman, Mijanur; Maity, Bholanath; **Koley, Debasis** and Ghosh, Suhrit. 2012. "Hydrogen-Bonding Induced Alternate Stacking of Donor (D) and Acceptor (A) Chromophores and their Supramolecular Switching to Segregated States." *Chemistry: A European Journal* 18, 9849-9859.

Das, Mousumi. 2012. "Electron Transfer Through Non-Hydrogen and Hydrogen Bonded Intermolecular Tunnel Junctions: A Computational Study." *Journal of Theoretical and Computational Chemistry* 11, 997-1004.

Das, Mousumi; Sardar, Sanjib Kr and Bagchi, Sanjib. 2012. "Electronic spectra and (hyper)polarizabilities of ketocyanine dye complexes with metal ions." *Journal of Molecular Structure* 1033, 236.

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Das, Tarasankar; Ghosh, Prasun; Shanavas, M. S; Maity, Arnab; Mondal, Somen and **Purkayastha, Pradipta**. 2012. "Protein-templated gold nanoclusters: Size dependent inversion of fluorescence emission in presence of molecular oxygen." *Nanoscale* 4, 6018-6024.

Datta, Pradip Kumar; Panda, Snigdha; Rama Krishna, G; **Reddy, C Malla** and **Zade, Sanjio S**. 2013. "Reaction time dependent Pd(II) and Pt(II) complexes of bis(methyl) thiasalen podand." *Dalton transactions* 42, 476-483.

De, P and Sumerlin, B S. 2013. "Precision Control of Temperature Response by Copolymerization of Di(ethylene glycol) Acrylate and an Acrylamide Comonomer." *Macromolecular Chemistry and Physics* 214, 272-279.

Dey, Suman K; Honecker, Andreas; Mitra, Partha; **Mandal, Swadhin K.** and **Mukherjee, Arindam**. 2012. "Magneto-structural studies of tetranuclear manganese [MnIII2MnII2] complexes of 9-hydroxy phenalenone with weak π-π interactions." *Eur. J. Inorg. Chem* XX, 5814-5824. *

Dey, Suman Kr; Honecker, Andreas; Mitra, Partha; **Mandal, Swadhin K** and **Mukherjee, Arindam**. 2012. "Magnetostructural Studies on Tetranuclear Manganese

[MnIII2MnII2] Complexes of 9-Hydroxyphenalenone with Weak π···π Interactions." *Eur. J. Inorg. Chem.* 35, 5814–5824. *

Garg, Manish; **Tiwari, Ashwani K** and Mathur, Deepak. 2012. "Quantum Dynamics of H2+ in Intense Laser Fields on Time-Dependent Potential Energy Surfaces." *J. Phys. Chem. A* 116, 8762-8767.

Ghosh, Prasun; Das, Tarasankar; Maity, Arnab and **Purkayastha, Pradipta**. 2012. "Light induced dynamics of charge transfer probe in lipid vesicles." *Soft Matter* 8, 10178.

Ghosh, Prasun; Mandal, Soumik; Das, Tarasankar; Maity, Arnab; Gupta, Parna and **Purkayastha, Pradipta**. 2012. ""Extra stabilisation" of pyrene based molecular couple by gamma-cyclodextrin in excited electronic state.", *Phys. Chem. Chem. Phys.* 14, 11500. *

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Haldar, Debasish; Jana, Poulami; Maity, Sibaprasad; Maity, Suman Kumar and **Ghorai, Pradip Kumar**. 2012. "Insights into H-aggregates and CH…O hydrogen bond mediated self-assembly of pyromellitic bisimide." *CrystEngComm* 14, 6586-6592.

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Haldar, Debasish; Maity, Sibaprasad; Kumar, Ravi; Maity, Suman Kumar; Jana, Poulami and Bera, Santu. 2013. "Synthesis and study of 2-Acetyl amino-3-[4-(2-amino-5-sulfo-phenylazo)-phenyl]-propionic acid: A new class of inhibitor for HEWL amyloidogenesis." *Medicinal Chemistry Communications* 4 , 530-536.

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5.1.3 Department of Earth Sciences

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* These papers appear in more than one Departmental Publications List because of co-authors from different departments

5.2 Student Publications

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5.3 Staff Publications

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Student Activities 6

6. Student Activities

This year the students' extracurricular activities were given a formal structure through the formation of Students' Gymkhana. Nineteen "clubs" have been formed to take care of each type of extracurricular activity. These are the Football Club, Cricket Club, Volleyball Club, Chess Culb, Athletics Club, Table Tennis Club, Badminton Club, Nature Club, Science Club, Arts Club, Music Club, Dramatics Club, Dance Club, Movie Club, Photography Club, Gym and Body Building Club, Basketball Club, and Trekking and Outdoor Activities Club.

A process of student representation in various Institute-level committees has been initiated. The students' opinions were sought and considered in the matters concerning hostel allocation, construction and furnishing of the new hostel complex, improvement of the medical facilities, formulation of the Institute guidelines, various issues related to computer cell and server management, in-campus transport arrangements etc. A students' canteen started operating under the management of the Students' Canteen sub-committee.

An Events Calendar was made by the Gymkhana in consultation with the clubs and sub-committees. This helped in organizing the extra-curricular events round the year. The Orientation programme for the 12MS batch of students was organized on the 2nd of August 2012.

In addition to all those in-campus activities, our students reached out to perform and participate in other institutes as well. Our football, badminton and table tennis teams represented our Institute in Shaurya-12, the sports Fest of IIT Kharagpur. Our students also participated in the National Creative Aptitude Test, 2012. The IISER Kolkata Students Chapter of SPIE was started this year.

INQUIVESTA-2013, the annual science fest of IISER Kolkata was organised on February 9-10, 2013. The two-day event encompassed a total of seventeen events such a quizzing, public talk, workshops, gaming, robotics etc., in which a large number of students from other institutes participated.

Students of IISER Kolkata conceived and organized the first Inter-IISER Sports Meet (IISM) this year, in which all the IISERs and the NISER participated. The IISER Kolkata teams became the champions in football, cricket, table tennis, badminton, and Kabaddi. IISER Kolkata grabbed the overall champions trophy.

Activities

Major Initiatives 7

7. Major Initiatives during the Financial Year 2012-2013

Mass Spectrometry Research Facility

During the year 2012-2013, several major initiatives were undertaken to generate research facility and also to establish academy-industry collaboration.

During the financial year 2012-2013, one of the major initiatives was to upgrade the existing Mass Spectrometry facility to cater the research activity and progress of faculty members of all major departments. The following instruments were procured :

1. Quadrupole Inductively Coupled Plasma Mass Spectrometer (Q-ICPMS): Precise and accurate analysis of elements in various matrices, including rock, mineral, fossil, living and non-living cells, and alloys are performed on the installed Thermo™ XSeries2 Quadrupole Inductively Coupled Plasma Mass Spectrometer. The instrument has been setup to routinely detect very low concentration (parts per billion and parts per trillion) of analytes.

2. High Resolution Multi Collector ICPMS: This instrument is useful for high-precision measurement of isotopic composition of several traditional and non-traditional elements including the transition elements and has extensive geochemical and geochronological applications.

3. Stable Isotope Ratio Mass Spectrometer (IRMS): This state-of-the-art equipment with a host of accessories, is capable of measuring isotopic ratios of C, H, O, and S and would be extensively used in applications to paleoclimatology, geochemistry and environmental sciences.

4. Electrospray Ionization (ESI) and Matrix-assisted Laser Desorption/Ionization (MALDI) Mass Spectrometers with required Chromatography System: This is capable of catering the advanced research of almost all areas of Chemistry and Biological Sciences including Polymer Chemistry, Peptide Chemistry, Nano-sciences, Organometallic Chemistry and Bioinorganic Chemistry, Proteomics and Metabolomics.

Academy-Industry Collaboration

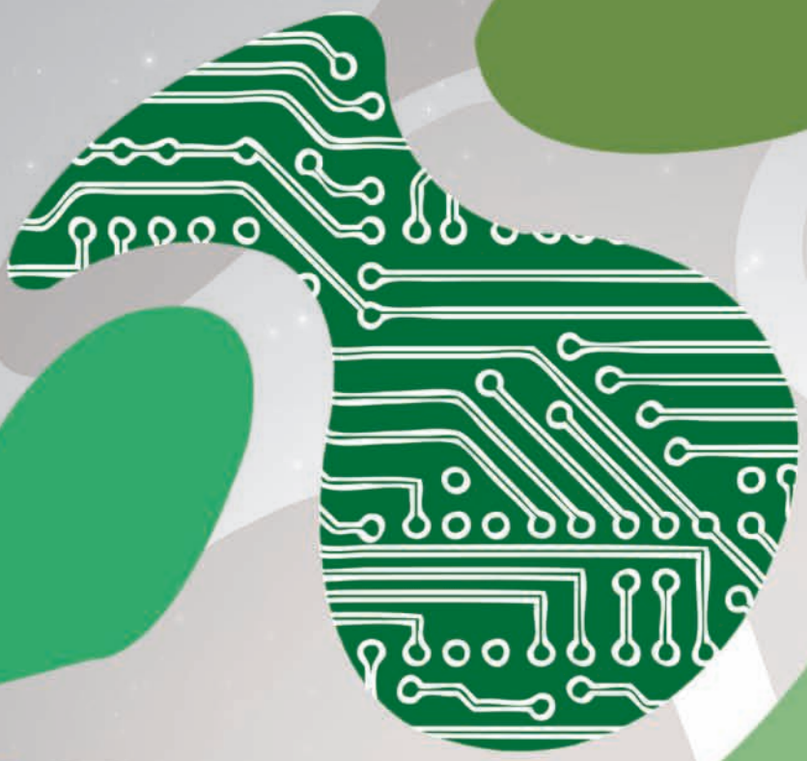
In the year 2012-2013, a major initiative was undertaken to establish strong collaboration between IISER Kolkata and Unilever Industries Private Limited. Presently, faculty members of IISER Kolkata are in collaboration with Unilever scientists in three different research areas.

Center of Excellence in Space Sciences, India (CESSI)

The Center of Excellence in Space Sciences, India (CESSI) is a national, multi-institutional Center hosted by the Indian Institute of Science Education and Research (IISER) Kolkata and is being established through funding from the Ministry of Human Resource Development. CESSI aims to explore the Sun's activity, generate the understanding necessary for space weather forecasting, hunt for gravitational waves, support national space science initiatives, participate in international capacity building activities and pursue public-private partnerships in space science research. It is envisaged that within the next five years, CESSI will start generating operational space weather forecasting for space agencies, telecommunication industries, aviation and meteorological organizations and the private sector, akin to the role played by the Space Weather Prediction Center of the US National Oceanic and Atmospheric Administration (NOAA).

The Center will take advantage of high-performance computing and experimental facilities, cloud computing and the high-speed National Knowledge Network grid to achieve its goals. CESSI is led by Dr. Dibyendu Nandi (IISER Kolkata) and involves faculty members from IISER Kolkata, IISER Pune, Indian Institute of Astrophysics (Bangalore), Udaipur Solar Observatory-Physical Research Laboratory (Udaipur) and the Indian Space Research Organization (Bangalore). CESSI faculty have wide-ranging interests in the astrophysical space sciences, and have the experience of handling international (NASA, ESA) and national (ISRO) space science projects.

Faculty members from different institutes and organizations currently affiliated with this center are Dipankar Banerjee (Co-Investigator, IIA Bangalore), Dibyendu Nandi (Principal Investigator and Center Coordinator, IISER Kolkata), Rajesh Nayak (Co-Investigator, IISER Kolkata), Paul Rajaguru (Co-Investigator, IIA Bangalore), K. Sankarasubramanian (Co-Investigator, ISRO Bangalore), Nandita Srivastava (Co-Investigator, USO-PRL Udaipur), Prasad Subramanian (Co-Investigator, IISER Pune).



Key Committees 8

8. Key Committees

8.1 Board of Governors

The Board of Governors was re-constituted as per section 11A of NIT (Amendment) Act, 2012 issued vide MHRD Letter No. F.No.35-04/2012-TS-VII dated 26.11.2012:
(From 21st Meeting of the Board of Governors held on the 22nd March, 2013)

Shri Pankaj R. Patel, *Chairperson*
Chairman and Managing Director
Zydus Cadila

Shri Ashok Thakur, *Ex-Officio Member*
Secretary, Department of Higher Education
Government of India

Prof. R.N. Mukherjee, *Ex-Officio Member*
Director
Indian Institute of Science Education and Research Kolkata

Prof. P. Balaram, *Ex-Officio Member*
Director
Indian Institute of Science, Bangalore

Prof. Indranil Manna, *Member*
Director
Indian Institute of Technology, Kanpur

Dr. Shailesh Nayak, *Member*
Secretary, Ministry of Earth Sciences
Government of India

Shri Ratan P. Watal, *Member*
Secretary, Ministry of New and Renewable Energy
Government of India

Shri Sanjay Mitra, *Ex-Officio Member*
Chief Secretary
Government of West Bengal

Prof. Narayan Banerjee, *Member*
Professor
Indian Institute of Science Education and Research Kolkata

Prof. Soumitro Banerjee, *Member*
Professor
Indian Institute of Science Education and Research Kolkata

Two eminent scientists,
to be nominated by the Council *Member*

Financial Advisor, *Ex-Officio Member*
Ministry of Human Resource Development
Government of India

Shri Joydeep Sil, *Secretary*
Registrar
Indian Institute of Science Education and Research Kolkata,

The following were the members of the Board of Governors till 20th Meeting of the Board of Governors held on the 8th November, 2012:

Dr. R.A. Mashelkar, *Chairperson*
Bhatnagar Fellow & President, Global Research Alliance
National Chemical Laboratory

Secretary, *Ex-Officio Member*
Ministry of Human Resource Development
Government of India

Prof. R.N. Mukherjee, *Ex-Officio Member*
Director
Indian Institute of Science Education and Research Kolkata

Prof. P. Balaram, *Ex-Officio Member*
Director
Indian Institute of Science, Bangalore

Prof. K.N. Ganesh, *Ex-Officio Member*
Director
Indian Institute of Science Education and Research, Pune

Prof. Sanjay G. Dhande, *Member*
Director
Indian Institute of Technology, Kanpur

Dr. Shailesh Nayak, *Member*
Secretary
Ministry of Earth Sciences
Government of India

Shri Deepak Gupta, *Member*
Secretary
Ministry of New and Renewable Energy
Government of India

Dr. M.K. Bhan, *Member*
Secretary
Ministry of Science & Technology
Government of India

Chief Secretary, *Ex-Officio Member*
Govt. of West Bengal

Prof. Somnath Dasgupta, *Member*
Professor
Indian Institute of Science Education and Research Kolkata

Prof. Prasanta Panigrahi, *Member*
Professor
Indian Institute of Science Education and Research
Kolkata

Dr. Pawan Kapur, *Member*
Director
Central Scientific Instruments Organization, Chandigarh

Dr. Kankan Bhattacharyya, *Member*
Director
Indian Association for the Cultivation of Science, Kolkata

Prof. Sankar K Pal, *Member*
Ex-Director
Indian Statistical Institute, Kolkata

Prof. B.K. Mishra, *Member*
Director
Institute of Minerals and Materials Technology,
Bhubaneswar
(Formerly Regional Research Laboratory)

Shri Joydeep Sil, *Secretary*
Registrar
Indian Institute of Science Education and Research
Kolkata

8.2 Finance Committee

The following were the members of the Finance Committee from the 15th Meeting held on the 22nd March, 2013:

Shri Pankaj R. Patel, *Ex-Officio Chairperson*
Chairman and Managing Director
Zydus Cadila

Financial Adviser, *Member*
Ministry of Human Resource Development
Government of India

Shri Shailendra Kumar, *Member*
Deputy Secretary
Ministry of Human Resource Development
Government of India

Prof. Sreebrata Goswami, *Member*
Sr. Professor & Dean (Academic)
Department of Inorganic Chemistry
Indian Association for the Cultivation of Science

Shri A N Bokshi, *Member*
Consultant
Ministry of Human Resource Development
Government of India

Prof. R. N. Mukherjee, *Ex-Officio Member*
Director
Indian Institute of Science Education and Research Kolkata

Shri Joydeep Sil, *Ex-Officio Secretary*
Registrar
Indian Institute of Science Education and Research
Kolkata

The following were the members of the Finance Committee till the 14th Meeting held on the 8th November, 2012:

Dr. R.A. Mashelkar, FRS *Ex-Officio Chairperson*
Bhatnagar Fellow & President
Global Research Alliance
National Chemical Laboratory

Shri A.N. Jha, *Member*
(On meeting held on 22.06.2012)
Joint Secretary & Financial Adviser
Ministry of Human Resource Development
Government of India

Shri R. Srinivasan, *Member*
(On meeting held on 22.06.2012)
Director (Mgt.)
Ministry of Human Resource Development
Government of India

Smt. Sarita Mittal, *Member*
(On meeting held on 08.11.2012)
Financial Adviser
Ministry of Human Resource Development
Government of India

Shri Shailendra Kumar, *Member*
(On meeting held on 08.11.2012)
Deputy Secretary
Ministry of Human Resource Development
Government of India

Prof. Kalyan B Sinha, *Member*
CSIR Bhatnagar Fellow
Jawaharlal Nehru Centre for
Advanced Scientific Research (JNCASR)
Jakkur Campus

Prof. Avinash Khare, *Member*
Raja Ramanna Fellow
Indian Institute of Science Education and Research, Pune

Prof. R. N. Mukherjee, *Ex-Officio Member*
Director
Indian Institute of Science Education and Research
Kolkata

Shri Joydeep Sil, *Ex-Officio Secretary*
Registrar
Indian Institute of Science Education and Research
Kolkata

8.3 Senate

The members of the Senate re-constituted as per NIT (Amendment) Act, 2012:

(From the 9th Meeting of the Senate held on the 15th March, 2013)

Prof. R.N. Mukherjee, *Ex-Officio Chairman*
Director
Indian Institute of Science Education and Research
Kolkata

Prof. Soumitro Banerjee, *Member*
Dean, Student
Indian Institute of Science Education and Research
Kolkata

Prof. Narayan Banerjee, *Member*
Dean, Faculty
Indian Institute of Science Education and Research
Kolkata

Prof. Prasanta K. Panigrahi, *Member*
Professor
Department of Physical Sciences
Indian Institute of Science Education and Research
Kolkata

Prof. Amitava Datta, *Member*
Professor
Department of Physical Sciences
Indian Institute of Science Education and Research
Kolkata

Prof. Somnath Dasgupta, (on lien), *Member*
Vice Chancellor
Assam University, Silchar

Prof. Gautam Biswas, *Member*
Director
CSIR-Central Mechanical Engineering Research Institute
(CMERI), Durgapur

Prof. Pratim Kumar Chattaraj, *Member*
Professor
Department of Chemistry
Indian Institute of Technology Kharagpur

Prof. Mamata Ray, *Member*
Pro-Vice Chancellor (B.A. & F)
University of Calcutta

Shri Joydeep Sil, *Secretary*
Registrar
Indian Institute of Science Education and Research
Kolkata

The following were the members of the Senate till 8th Meeting of the Senate held on the 28th December, 2012:

Prof. R.N. Mukherjee, *Ex-Officio Chairman*
Director
Indian Institute of Science Education and Research
Kolkata

Prof. Soumitro Banerjee, *Ex-Officio Member*
Dean, Student
Indian Institute of Science Education and Research
Kolkata

Prof. Somnath Dasgupta, *Ex-Officio Member*
(Till 22.06.2012)
Dean, Research & Development
Indian Institute of Science Education and Research
Kolkata

Dr. Tapas Sengupta, *Ex-Officio Member*
(From 23.06.2012)
Dean, Research & Development
Indian Institute of Science Education and Research
Kolkata

Prof. Narayan Banerjee, *Ex-Officio Member*
Dean, Faculty
Indian Institute of Science Education and Research
Kolkata

Prof. Amitava Datta, *Ex-Officio Member*
(Till 30.06.2012)
Dean, Academic
Indian Institute of Science Education and Research
Kolkata

Dr. Asok K. Nanda, *Ex-Officio Member*
(From 01.07.2012)
Dean, Academic
Indian Institute of Science Education and Research
Kolkata

Prof. Prasanta K. Panigrahi, *Member*
Professor
Department of Physical Sciences
Indian Institute of Science Education and Research
Kolkata

Dr. Ravikant Vadlamani, *Member*
Associate Professor
Department of Earth Sciences
Indian Institute of Science Education and Research
Kolkata

Dr. Jayasri Das Sarma, *Member*
Associate Professor
Department of Biological Sciences
Indian Institute of Science Education and Research
Kolkata

Dr. Supriyo Mitra, *Member*
Associate Professor
Department of Earth Sciences
Indian Institute of Science Education and Research
Kolkata

Dr. Kaneenika Sinha, *Member*
Assistant Professor
Department of Mathematics & Statistics,
Indian Institute of Science Education and Research
Kolkata

Dr. P.A. Sreeram, *Member*
Assistant Professor
Department of Physical Sciences
Indian Institute of Science Education and Research
Kolkata

Dr. Sanjio Zade, *Member*
Assistant Professor
Department of Chemical Sciences
Indian Institute of Science Education and Research
Kolkata

Prof. T.K. Chandrasekhar, *Member*
Director
National Institute of Science Education & Research,
Bhubaneswar

Dr. G. Balakrish Nair, *Member*
Director
National Institute of Cholera and Enteric Diseases,
Kolkata

Prof. Debasish Mukherjee, *Member*
Ex-Director
Indian Association for Cultivation of Science,
Kolkata

Prof. Hemanta Majumdar, *Member*
Chief Scientist, CSIR-IICB
Indian Institute of Chemical Biology, Kolkata

Prof. Partha Majumdar, *Member*
Director
The National Institute of Biomedical Genomics, Kalyani

Prof. Swapan Datta, *Member*
Ex-faculty
Indian Institute of Science Education and Research
Kolkata

Prof. Suranjan Das, *Member*
Vice Chancellor
University of Calcutta

Prof. Ashok Ranjan Thakur, *Member*
Ex-Vice Chancellor
West Bengal State University, Barasat

Shri Joydeep Sil, *Ex-Officio Secretary*
Registrar
Indian Institute of Science Education and Research
Kolkata

Prepared by:
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