

বসু বিজ্ঞান মন্দির



BOSE INSTITUTE NEWS

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A NEWSLETTER OF BOSE INSTITUTE

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FROM THE DIRECTOR'S DESK



I consider myself greatly privileged to present this edition of Bose Institute Newsletter, on the day when we embark on the centenary celebration of our beloved institution. A centenary in the life of an institution is indeed a

watershed event; it gives us an opportunity to relive and relish our glorious history and take pride in the legacy that we have had the fortune to inherit. But, we often overlook the responsibility that such a legacy imposes on us. The centenary celebration is also an occasion to introspect, to ask ourselves whether we are worthy of the legacy and what we ourselves are doing to uphold or enrich the legacy!

We at Bose Institute continue to strive for excellence, as is our creed. By all the usual yardsticks for measuring the performance of an academic institution, we have shown steady improvement over the years and the past year has been no exception. Our colleagues, faculty and students, have won coveted laurels; raising the bar is our motto, so that complacency does not creep in. We are making steady progress with the construction of the unified academic campus at the Salt Lake Campus. This long cherished dream will become a reality within the next few months.

With best wishes to all readers of this Newsletter.

Sibaji Raha



The 77th Acharya J.C. Bose Memorial Lecture will be delivered by Dr. T. Ramasami, Former Secretary to Government of India, Ministry of Science and Technology, New Delhi, entitled "Living by Legacy, Leadership and Legendary of Acharya J. C. Bose: India's Challenge".

Living by Legacy, Leadership and Legendary of Acharya J.C. Bose: India's Challenge

Abstract

Acharya Jagdish Chandra Bose is a legend and a leader in history of Indian Science. It is not an exaggeration to record that he remains the first example of a modern scientist of India. His legacy in science is a hard one to live by. He pioneered and broke new paths. While modern science might have progressed and changed courses, his major contributions remain inspiration for a large body of scientists across the world. He remains a role model for discovery science. Discovery science focuses on a) new knowledge not known to others, b) new understanding or revealing mysteries of phenomena, c) global leadership and peer recognition and d) first mover advantages in the market place. Bose Institute representing his legacy and remaining inspired by his spirit of inquiry is duty bound to live by his standards. In tribute to Acharya JC Bose on his epoch making discoveries, an attempt would be made to highlight some of his astounding contributions for drawing inspirations for Indian science in general and Bose Institute in a particular for shaping pursuit of discovery science in future. The challenge of Indian science in living by the legacy and leadership profiles of the legendary might be large but it is what Acharya Bose would have wished. Hence let us make a valiant attempt to follow a star who shines bright in the horizon of Indian science.

Editorial Board :

Prof. D. Home, Prof. G. Basu, Prof. P. Parrack,
Dr. G. Gangopadhyay, Smt. I. Chatterjee and Shri T. K. Maji
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CURRENT EVENTS

98th Foundation Day Celebrated



The 98th Foundation Day of Bose Institute was celebrated on November 30, 2014. **Dr. Srikumar Banerjee**, DAE-Homi Bhabha Chair Professor, Bhabha Atomic Research Centre, Mumbai, graced the occasion as the Guest of Honour and delivered the 76th Acharya Jagadis Chandra Memorial Lecture on **Order and Chaos – In Assemblies of Atoms and in Human Societies**. Prof. Sushanta Dattagupta, Hon'ble Vice Chancellor, Visva-Bharati, presided over the programme. Prof. Sibaji Raha, Director, Bose Institute, delivered the Welcome Address and presented the Institute Report. Sir Nilratan Sirkar Prize 2014 was awarded to Ms. Moniya Chatterjee, Senior Research Fellow, Division of Plant Biology and Prof. B. B. Biswas Outstanding Student Award 2014 was presented to Ms. Aritrika Pal, Senior Research Fellow, Dept. of Biochemistry.

Triennial Gold Medal Lecture 2014



Professor Nadrian C. Seeman, Margaret and Herman Sokol Professor of Chemistry at New York University, delivered the Acharya J.C. Bose Triennial Gold Medal Lecture on December 31, 2014, entitled **"DNA: Not Merely the Secret of Life"**. Professor Seeman, considered the father of DNA nanotechnology, spoke about branched DNA species that can be joined using Watson-Crick base pairing to produce N-connected objects and lattices leading to novel topological targets and to molecular devices such as bipedal walkers. The talk was attended by a large audience.

Annual Sports Day

The Annual Sports Day was celebrated on January 16, 2015, with the active participation by academic as well as non-academic members of Bose Institute.



National Science Day 2015

Bose Institute observed **National Science Day** on February 28, 2015, through various activities. The theme of the National Science Day 2015 was **"Science for Nation Building"**. This day is celebrated in our Institute every year during which students demonstrate various science projects as well as their latest researches. The celebration also includes public speeches, exhibitions of science movies, science exhibition based on themes and concepts, debates, quiz competitions, lectures, science model exhibitions and many more activities. A large number of participants including guests, scientists, students and other professionals attended the programme.

Central Animal House & Research Facility Inaugurated



Central Animal House & Research Facility, located at the Acharya J.C. Bose Biotechnology Innovation Centre, Bose Institute, Madhyamgram, Kolkata, was inaugurated by Dr. Harsh Vardhan, Hon'ble Union Minister for Science & Technology and Earth Sciences, Govt. of India on May 2, 2015. The facility is a state of the art world class environmentally controlled "Central Animal House and Research Facility" for Developmental and Toxicology Research with comprehensive facilities for breeding, maintenance and experimentation on small laboratory animals. This facility will be utilized for experimental research in accordance with the principles of good laboratory practices and CPCSEA, Ministry of Environment, Forest & Climate Change, Government of India guidelines. Further, it would facilitate research and development in partnership with academic institutions, industries and funding agencies for drug discovery-cum-validation and devices of translational medical research with the basic objective of advancement of biological knowledge useful for saving the lives and /or alleviating the suffering of human beings, animals and plants. The experiments will be performed with due respect to animal ethics. The Centre will also be involved in skilled manpower development through education and training in laboratory animal care and experimental techniques. The main objective of the Centre will be to supply defined strains of laboratory animals like mice, rats, guinea pigs, hamsters and rabbits for Bio-medical Research to the scientific community of the Eastern and North Eastern part of India.

NESST-BASE Programme 2015

The immensely popular programme of North-East Students' Summer Training on Basic Sciences (NESST-BASE) was successfully held at Darjeeling Campus of Bose Institute from



May 18-30, 2015. This programme is dedicated to the school children of North Eastern states and is sponsored by DST, Govt. of India. Twenty four students from different states along with their accompanying teachers joyfully participated in this residential programme. The students were selected by the respective state authorities. They did hands-on experiments on Physical Science, Chemical Science, Plant Science and Microbial Science. The Mathematics course was 'Fun with Maths'. Faculty members of Bose Institute and a few eminent teachers from other institutions acted as resource persons. Professor Sunil K Gupta, eminent physicist from TIFR, delivered a popular lecture on May 22, 2015. Children from different schools of Darjeeling were also invited on this occasion.



Blood Donation Camp Organized

The 7th Blood Donation Camp was organized by Bose Institute Blood Donation Committee on October 9, 2015, in the Seminar Room of Centenary Campus. Prof. Siddhartha Roy, Acting Director, Bose Institute, in presence of Prof. Samir Ranjan Sikdar, Professor-in-charge, Registrar's office, Bose Institute, inaugurated the programme. Prof. Swati Gupta Bhattacharya, Chairperson, Blood Donation Committee of Bose Institute, convened the programme. On this occasion, seventy four members from different sections of Bose Institute donated blood. A Health check-up was organized and a seminar on "Attack to Attack" was delivered by Dr. Parijat Deb Choudhury, a renowned cardiologist from Fortis Hospital, Kolkata. He also shared his knowledge and experience about "Detection in Cardiac Disease and its Prevention".



Dipta Memorial Symposium

The 23rd Dipta Memorial Symposium, on the theme **Space: the neighbourhood we live in**, was organised on October 6, 2015, at the Main Campus of the Institute by the Dipta Memorial Symposium Committee in association with Bose Institute Research Scholars' Forum. Prof. Sibaji Raha, Director, Bose Institute, chaired the lecture session where Prof. Amalendu Bandyopadhyay, former Director of Positional Astronomy Centre, Kolkata, presented a talk on **Journey to Space**. Dr. Supratik Pal, Associate Professor, Physics and Applied Mathematics Unit, Indian Statistical Institute, Kolkata, delivered a lecture on **Our Universe: an Expanding Mystery**. Dr. Pratik Majumdar, joint Colloquium Co-ordinator, Associate Professor (E), Saha Institute of Nuclear Physics, Kolkata, also shared his experience on **Exploring our Universe with High Energy Particles and Photons**.

149th Birth Anniversary of Sister Nivedita Celebrated

The 149th Birth Anniversary of Sister Nivedita was celebrated on October 28, 2014, in the Lecture Hall of Bose Institute, Main Campus, jointly by Bose Institute and the Vivekananda Janmostava Samity. Mr. Dhiraj Basu, Hony. General Secretary of the Samiti, delivered the welcome address. Hon'ble Justice and ex-Governor of West Bengal, Shri Shyamal Kr. Sen, presided over the occasion. A number of distinguished guests and members of Bose Institute attended the auspicious occasion.

131st Birthday Celebration of Prof. Debendra Mohan Bose

The 131st Birthday of Prof. Debendra Mohan Bose was celebrated on November 26, 2015, at the Main Campus Lecture Hall of the Institute. Prof. Partha P. Majumder, the founding Director of the National Institute of Biomedical Genomics, Kalyani, West Bengal, and Professor, Indian Statistical Institute, Kolkata, graced the occasion as Guest of Honour and delivered the **D. M. Bose Memorial Lecture** on the topic "**Enabling Precision Medicine for Cancer**". Many distinguished scientists, students and other professionals were present.

Scheduled Tribe Specific Rural Biotechnology Programme

Under this programme, Bose Institute is working for the economic development of scheduled Tribe beneficiaries in five districts of West Bengal (Purulia, Bankura, Birbhum, Pashchim Medinipur and South 24-Parganas), covering about 50 villages either directly through the departmental machinery or through some NGOs. The areas emphasised are rain water harvesting for drinking and irrigation, orchard development, vermicompost production and organic farming, and animal healthcare through organization of animal health camps on a regular basis. Since December 2014, forty concrete tanks (capacity 2,000 L), 15 poly-ponds (capacity 40,000 L – 75,000 L), about 200 bighas of orchard and 50 vermicompost pits (dual) have been developed. Nine animal health camps were organised in Purulia, Birbhum and Pashchim Medinipur. In these health camps, a total of 1,111 cows and buffaloes, 2,309 goats and sheep, 25 pigs and 3,317 chicken and ducks were either vaccinated or treated with preventive medicines. Two community sericulture facilities have been developed : in the Bhutadhi village (Purulia) and in Chhachanpur village (Bankura). In each, about 15 bigha land was utilized for mulberry plantation and rearing house establishment, and about 3,000 man days were involved in sericulture activity. Food processing has been assigned as the next priority area where local food resources that the tribal people used to consume will be processed for their daily use throughout the year. In the animal husbandry programme, about 130 tribal beneficiaries are now involved in chicken and/or duck rearing, 40 beneficiaries are involved in pig rearing and 50 in goat rearing. One hundred bee-keeping boxes were distributed to the beneficiaries. We achieved success in community fishery programme among the Sabar families in the Satyadaspur village of G-Plot in the Patharpratima Block of Sunderban. Mushroom cultivation programme in the Santiniketan area of Birbhum has been a successful one and the beneficiaries have been producing mushrooms in a commercial scale. Funding has been given to one local NGO at Birbhum for development of mushroom spawn laboratory and formation of a mushroom society with the tribal beneficiaries.



Training programme on "Animal Husbandry, Mushroom cultivation, Vermicompost production, Apiculture, Food processing and Rain water harvesting" held on 18-22 November 2015 at Amlasole, Paschim Medinipur. Resource persons and guests sitting in the front row from left to right are Dr. Asim Prasad Chattopadhyay (Animal husbandry), Mr. Biswarup Bhakta (Apiculture), Mr. L. C. Porel (Vermicompost), Mrs. Srabani Sikdar (Rain water harvesting & Food processing), Prof. S.R. Sikdar (Coordinator Rural Biotechnology Programme, Bose Institute), Mr. Santu Taraphdar (BDO, Binpur 2) and Dr. Nihar Kanti Ghosh (Animal husbandry).



Photo session during the "Animal Health Camp" organised by Bose Institute under the Scheduled Tribe Specific Rural Biotechnology Programme in collaboration with Animal Resources Development Department Pashchim Medinipur and BLDO Binpur 2 during 18-20 November 2015 at Kankrajhor, Amlasole and Amjharna of Pashchim Medinipur. Besides 10 Bose Institute support staffs from Falta Experimental Farm, 5 resource persons, Sri Banshi Badan Mahato, Sabhapati Binpur 2, Sri Bikash Shing, Member Jila Parisad, Kankrajhor CRPF Commandant, 4 Live Stock Development Attendants from the Block attended the camp. Veterinarian Officer Binpur 2 Block has kindly provided necessary vaccines for the camp. During the 3 day camp 363 cows and buffaloes, 1176 goats and sheep and 2,477 birds were either vaccinated or treated with medicines and 8 operations of cattle were done.



Representative orchard at Chhachanpur village of Bankura. The local tribal beneficiaries cum workers seen standing beside the one year old Mango plants transplanted last year. In 2015 about 200 bighas of fallow lands of tribal beneficiaries were transformed into orchard in Purulia, Bankura and Paschim Medinipur.



Representative poly-pond at Amlasole (size of this pond is 22'x20'x7', capacity ~75,000 L). Fifteen such poly-ponds were constructed so far in Purulia and Pashchim Medinipur for harvesting rain water. Demonstrations are being given in these regions for utilization of this water for watering orchard plants, vegetables cultivation, cultivation of low water requiring crop plants and toilet use.

SYMPOSIA AND CONFERENCES HELD



"International Conference on Informatics & Integrative Biology" (CIIB-2014) was held during December 17-19, 2014, to celebrate the silver jubilee of the Bioinformatics Centre at Bose Institute. **Dr. Zhumur Ghosh** and **Dr. Sudipto Saha** were the Joint Secretaries and **Dr. Shubhra Ghosh Dastidar** was the Convener for the Scientific Programme.

- **Prof. Subrata Majumdar** (Division of Molecular Medicine) arranged (i) a seminar on 'Trends in Biochemical Sciences' at Sankarpur, during April, 2015 as the President of the Society of Biological Chemists (India), Kolkata Chapter, and (ii) NESST-BASE programme at Darjeeling as a coordinator in Microbial Sciences.



- **Prof. Swati Sen Mandi** organized a Workshop and Hands-on Training for young researchers on **DNA Fingerprinting and Diagnostics of Medicinal Potential in Plants** during June 9-23, 2015, at Bose Institute (Main Campus). Participants included research scholars, assistant professors, associate professors from various Research Institutes and Universities from different states of India including some states in North-East India. The workshop included technical lectures by subject experts and Hands-on Training.

VISITS ABROAD

Prof. P. Chakrabarti (Biochemistry) attended (i) the Second Conference of the Bangladesh Crystallographic Association, Dhaka, January 10, 2015; (ii) Modern Methods in Computing Biology: A Brainstorming Workshop, A*STAR, Singapore, March 23-24, 2015.

Dr. Shubhra Ghosh Dastidar (Bioinformatics Centre) delivered a talk in 'BII-Brainstorming symposium' held at Bioinformatics Institute, A*STAR, Singapore, during March 23-24, 2015.

Dr. Zhumur Ghosh (Bioinformatics Centre) presented her work on piRNAs in the EMBO|EMBL Symposium: The Non-coding Genome at EMBL, Heidelberg, Germany, October 18-21, 2015.

Prof. Joyoti Basu (Chemistry) visited (i) Belgium from May 20-23, 2015 and presented a paper in the 15th International Conference Tumor Necrosis Factor. (ii) Visited Korea from September 21-23, 2015 and delivered a lecture in the International Conference of the Korean Society for Molecular and Cellular Biology.

Shri Arun Kumar Sharma, SRF (Chemistry) visited The Netherlands from June 7-11, 2015 to present a paper in the conference 6th Congress of European Microbiologists (FEMS 2015) and won a FEMS2015 Grant Best Poster prize for the presentation entitled "The peptidoglycan remodeling enzyme RpfB of Mycobacterium tuberculosis is transcriptionally regulated by MtrA and Sigma factor B".

Shri Srijan Kaushik Banerjee, SRF-Institute (Chemistry) visited U.S.A. from July 26-31, 2015 to present a poster on Microbial adhesion and signal transduction in the Gordon Research Conference.

Prof. Parimal C Sen (Division of Molecular Medicine) visited Ljubljana, Slovenia, September 15-26, 2014 under a bilateral exchange programme between INSA and Slovenia Academy of Sciences and Arts.

Prof. Gaurisankar Sa (Division of Molecular Medicine) was invited to deliver a talk at the 6th Congress of the FIMSA (The Federation of

Immunological Societies of Asia Oceania) at Singapore in July 2015.

Dr. Anup Kumar Misra (Division of Molecular Medicine) visited University of Debrecen, Hungary, under INSA-HAS bilateral exchange program during April-June, 2015.

Dr. Mahadeb Pal (Division of Molecular Medicine) attended a conference on "9th Neurodegenerative Conditions Research and Development", Philadelphia, USA, September 9-11, 2015.

Dr. Parthapratim Bose, DST-Young Scientist (Division of Molecular Medicine) attended the 23rd International Symposium on Glycoconjugates (Glyco23) in Split, Croatia, September 15-20, 2015. Two abstracts were accepted for presentation in the conference.

Shri Avisek Banerjee, UGC-SRF (Division of Molecular Medicine) working under the supervision of Dr. Kaushik Biswas, presented a poster entitled "Histone H3 acetylation, nucleosome eviction and binding of SP1 cause GM2-synthase over-expression in renal cell carcinoma" at the 3rd Max-Planck Epigenetics Meeting held during December 3-5, 2014 at the Max-Planck Institute of Immunobiology and Epigenetics in Freiburg, Germany.

Dr. Shubho Chaudhuri (Division of Plant Biology) visited Vienna, Austria, during June 29-July 2, 2015 to present a paper at an international symposium on "Plant Abiotic Stress Tolerance III", organised by Vienna International Science Conference & Events Association (VISCEA).

Prof. Tapan K. Dutta (Microbiology) visited Barcelona, Spain, October 27-31, 2015 and delivered a lecture in the BioMicroWorld 2015: VI International Conference on Environmental, Industrial and Applied Microbiology

Mr. Prithwiraj Kirtania (Microbiology) visited Netherlands from June 7-11, 2015 and made an oral presentation at 6th Congress of European Microbiologists, organized by FEMS.

Prof. T. P. Sinha (Physics) visited (i) National Institute of Standard and Technology, Gaithersburg (Maryland), USA, during June 25-26, 2015 to deliver a seminar; (ii) Stony Brook University, New York, USA during June 29-July 3, 2015 to deliver a talk in the International Conference on Advances in Functional Materials.

Dr. Dhruba Gupta (Physics) visited CERN, Geneva, Switzerland and presented a poster titled "Breakup and transfer reactions with ⁹Be to study ⁷Li abundance anomaly" at the ISOLDE Workshop and Users Meeting 2014, "50th Anniversary Edition", December 15-17, 2014.

Dr. Suprio Das (Physics/CAPSS) visited CERN, Geneva to work for ALICE TPC upgrade program during May 17 to 23, 2015. Dr. Das also attended "13th. Pisa Meeting on Advanced Detectors" at Isola d'Elba, Italy during May 24-30, 2015 and presented a poster.

Dr. Sanat Das, Ramanujan Fellow (ESS) visited Disaster Prevention Research Institute, Kyoto University, Kyoto, Japan for a collaborative work on Tropical Cyclone at Bay of Bengal, during February 15-Mar 7, 2015, using research grant of Ramanujan Fellowship. Dr. Das was invited by Prof. Hirohiko Ishikawa, Disaster Prevention Research Institute, Kyoto University, Japan.

Prof. Sanjay K. Ghosh (Physics) visited CERN, Switzerland, during August 18-September 5, 2015 to participate in the ALICE experiment.

RECENT AWARDS AND HONOURS

- **Prof. Parimal C. Sen** (Division of Molecular Medicine) chaired a session in the 2nd international meet on "Advanced Studies on Cell Signaling Network", December 2014 at Indian Institute of Chemical Biology.
- **Prof. Subrata Majumdar** (Division of Molecular Medicine) was selected as the President of Indian Society on Tobacco and Health, India.
- **Prof. Gaurisankar Sa** (Division of Molecular Medicine) was selected as: (i) Fellow of FIMSA (The Federation of Immunological Societies of Asia Oceania); (ii) Fellow of The National Academy of Sciences in 2015; (iii) Member of Task Force in Cancer Biology by DBT, Govt. of India.
- **Prof. Nripendranath Mandal** (Division of Molecular Medicine) was elected Fellow of The Zoological Society (FZS), Kolkata, 2014, for outstanding contribution in the field of Molecular Biology and Biotechnology.
- **Dr. Anup Kumar Misra** (Division of Molecular Medicine) received the Dr. H. C. Srivastava Young Scientist Award from Association of Carbohydrate Chemists and Technologists, India (ACCTI).
- **Dr. Partha Pratim Bose, DST-Young Scientist** (Division of Molecular Medicine) was selected as the Sectional Recorder for the section of New Biology (including Biochemistry, Biophysics & Molecular Biology and Biotechnology), Indian Science Congress, for the session 2015-2016.
- **Shri Dipankar Chaudhuri, SRF (CSIR-Adhoc)** (Division of Molecular Medicine) was awarded the Best Poster presentation in the National conference on "Cryptogam Research in India: Progress and

Prospects" September 28-29, 2015, organized by NBRI, Lucknow, India.

- **Prof. Sampa Das** (Division of Plant Biology) was honoured as a member in good standing of The International Society for Biosafety Research.
- **Shri Bodhisattwa Saha** (Division of Plant Biology) working under **Prof. Swati Gupta Bhattacharya** attended the 6th Annual Congress of Proteomics Society of India (December 7-9, 2014) at Mumbai where he received the "Best Scientific Essay Writing and Artwork Award".
- **Ms. Nandini Ghosh** (Division of Plant Biology) working under **Prof. Swati Gupta Bhattacharya** received the 1st prize in P. H. Gregory Memorial Award (Oral) in the 18th National Conference on Aerobiology held at Tumkur University at Tumkur (Karnataka), September 28-30, 2015.
- **Ms. Debarati Dey** (Division of Plant Biology) working under **Prof. Swati Gupta Bhattacharya** received the 2nd prize in P. H. Gregory Memorial Award (Oral) in the 18th National Conference on Aerobiology held at Tumkur University at Tumkur (Karnataka), September 28-30, 2015.
- **Ms. Sangita Roy** (Division of Plant Biology) working under **Prof. Swati Gupta Bhattacharya**, was awarded the 1st Prize in the Oral Session in the 18th National Conference on Aerobiology held at Tumkur University at Tumkur (Karnataka), September 28-30, 2015.
- **Deepti Sarkar, Jayanti Jodder, Sayani Dey, Ranjan Kumar Maji, Arijita Sarkar, Zhumur Ghosh, Pallob Kundu** (Division of Plant Biology) were awarded the Best Poster Award for their poster, "Expression and transcriptional regulation of microRNAs during Alternaria stress in tomato" at the Conference on Informatics & Integrative Biology (CIIB-2014), December 17-19, 2014, organized by the Bioinformatics Center, Bose Institute, Kolkata.
- **Jayanti Jodder, Deepti Sarkar, Rohit Das and Pallob Kundu** (Division of Plant Biology) were awarded the Best Poster Award of the Session for their poster, "Understanding the complex regulation of miR167 and its target genes' expression under patho-physiological changes in tomato" at the symposium on Evolving Plant Biology: From Chromosomes to Genomics, November 27-29, 2014, Organized by Bose Institute, Kolkata; University of Calcutta; West Bengal Academy of Science and Technology and The Ramakrishna Mission Institute of Culture.
- **Arunava Mandal, Deepti Sarkar and Pallob Kundu** (Division of Plant Biology) were awarded the Best Poster Award for their poster "Mechanism of a virus stress-induced regulation of a leaf developmental gene expression in tomato: significance in disease symptom manifestation" presented at the Symposium on Environmental Impact on Biodiversity and Plant Development, Department of Biological Sciences, Presidency University, Kolkata, February, 2015.
- **Prof. Tapan K. Dutta** (Microbiology) was elected as a Fellow of West Bengal Academy of Science and Technology in 2014.

Ph. D. Degree Awarded (From April 1, 2014 to March 31, 2015)

- **Abhishek Sinha** (Biochemistry) Identification and characterization of genes that play a role in the trophozoite to cyst transition of *Giardia lamblia*. Supervisor: Dr. Srimonti Sarkar.
- **Kamalika Sen** (Bioinformatics Centre) Genomic and functional analysis of the human genes configuring pseudogenes in the frame of evolutionary studies heterogeneity in the human disease and non-disease proteome. Supervisor: Prof. T. C. Ghosh.
- **Arnab Bandyopadhyay** (Chemistry) Theoretical and Computational Study of Biochemical Signaling Pathways. Supervisor: Dr. Suman Banik.
- **Joyes De** (Chemistry) Mesomorphism in Cholesteryl Esters and Membrane Phospholipids: Calorimetry, XRD, NMR, and Theoretical/Computational Studies. Supervisor: Prof. P. Das.
- **Sourav Sanyal** (Chemistry) Regulation of stress response factors and their roles in Mycobacteria. Supervisor: Prof. M. Kundu.
- **Rajdeep Banerjee** (Chemistry) Mechanism of Gene Regulation in *Mycobacterium tuberculosis*. Supervisor: Dr. Jayanta Mukhopadhyay.
- **Samik Chakraborty** (Division of Molecular Medicine) Understanding the mechanisms of tumor angiogenesis and apoptosis: An approach towards molecular interventions. Supervisor: Prof. Tanya Das.
- **Rhitajit Sarkar** (Division of Molecular Medicine) Ethnopharmacological study of various Medicinal plants used in Indian system of traditional medicine. Supervisor: Prof. Nripendranath Mandal.
- **Abhijit Sau** (Division of Molecular Medicine) Synthetic studies on microbial complex oligosaccharides. Supervisor: Dr. Anup Kumar Misra.

- **Mrinmoy Mazumder** (Division of Plant Biology) Identification of *in vivo* function of *Alternaria brassicicola* induced *Sinapis alba* L. gene(S) in susceptible *Brassica juncea* L. background. Supervisor: Prof. D. Basu.
- **Anindita Sengupta** (Division of Plant Biology) A Molecular Approach Towards Elucidation of Interaction between *Bacillus thuringiensis* Coded Cry Proteins with Its Receptors in *Helicoverpa armigera*. Supervisor: Prof. Sampa Das.
- **Sritama Mukherjee** (Division of Plant Biology) Inositol metabolic pathways in relation to salt-tolerance in plants: A molecular and transgenic approach. Supervisor: Prof. A.N. Lahiri Majumder.
- **Pijush Mallick** (Division of Plant Biology) Production and Molecular Characterization of Somatic Hybrid Strains Developed through Protoplast Fusion Between *Pleurotus florida* + *Lentinula edodes* and *Pleurotus florida* + *Lentinus squarrosulus*. Supervisor: Prof. Samir Ranjan Sikdar.
- **Masrura Alam** (Microbiology) Evolution and Interactions of the Sox (Sulfur Oxidation) Multienzyme System of Lithotrophic Bacteria. Supervisor: Dr. Wriddhiman Ghosh.
- **Prithwiraj Kirtania** (Microbiology) A study of mycobacteriophage D29 growth under hypoxic condition. Supervisor: Prof. Sujoy K. Das Gupta.
- **Sayantari Ghosh** (Physics) Deterministic and Stochastic Dynamics of Model Gene Circuits. Supervisor: Prof. Indrani Bose.
- **Premalata Kumari** (Physics) Dielectric spectroscopy studies of some complex perovskite oxides. Co-Supervisor: Prof. T.P. Sinha.
- **Lata Agrawal** (Physics) Dielectric relaxation in some complex perovskite oxides. Co-Supervisor: Prof. T.P. Sinha.

GRANTS RECEIVED

The following research proposals have been granted to Bose Institute during last one year by different funding agencies. The title of the project, funding agency involved, name of the principal investigator, amount of grant and duration of the projects are mentioned.

- **Understanding the evolutionary origin and mechanism of action of a putative primase-polymerase encoded by the mycobacterial plasmid pAL5000; CSIR;** Prof. Sujoy K. Das Gupta (Microbiology); ₹34,93,800; 3 years.
- **Raf1 quality control and development of pathophysiological conditions; DBT;** Dr. Atin Kumar Mandal (Division of Molecular Medicine); ₹48,79,000; 3 years.
- **The role of the secreted antigen Rv0009 pf Mycobacterium tuberculosis in modulating signaling in macrophages; DAE;** Prof. Joyoti Basu (Chemistry); ₹29,55,750; 3 years.
- **Investigation of the archaeal diversity and activity in Sundarbans mangrove sediment, India; CSIR;** Dr. Abhrajyoti Ghosh (Biochemistry); ₹37,93,800; 3 years.
- **Identification and characterization of micro RNAs (miRNAs) in *Penaeus monodon*; DBT;** Prof. N. Mandal (Division of Molecular Medicine); ₹44,06,200; 3 years.
- **Systematic discovery of biomarkers of asthma caused by common environmental allergens using human plasma proteomics, cytokine profiling and network biology – a system approach to drug discovery; ICMR;** Prof. Swati Gupta Bhattacharyya (Division of Plant Biology); ₹16,93,900 (1st year); 3 years.
- **TLR2-dependent engagement of the host cell kinases and phosphatases that dictate disease progression or resolution; DBT;** Prof. Subrata Majumdar (Division of Molecular Medicine); ₹45,40,000; 2 years.
- **Assessment of Plant Growth Promoting Bacteria in the Mangrove Rhizosphere and evolution of Plant Growth Promotion Activity on Rice (*Oryza sativa*); DBT-WB;** Dr. Abhrajyoti Ghosh (Biochemistry); ₹25,95,520; 3 years.
- **Regulation of the mycobacterial stress response by the two-component system SenX3-RegX3 in *Mycobacterium tuberculosis*; SERB (DST);** Prof. Manikuntala Kundu (Chemistry); ₹56,60,000; 3 years.
- **Unravelling the role of PLC in plant drought and heat stress tolerance: Exploring the potential of PI metabolism to improve crop yield; DBT-NOW;** Prof. A. N. Lahiri Majumder (Division of Plant Biology); ₹1,26,87,600; 3 years.
- **Astrophysical S-factor from nuclear reactions with a rare isotope beam ⁷Be; ISRO;** Dr. Dhruva Gupta (Physics); ₹38,50,000; 3 years.
- **Role of c-Jun N-Terminal Kinase (JNK) in tumor derived soluble factor mediated T cell apoptosis; DBT-RGCB;** Dr. Kaushik Biswas (Division of Molecular Medicine); ₹24,90,000; 3 years.
- **Vertical profiling of the sedimentary microbiome of the Arabian sea OMZ with special reference to carbon and sulphur cycles; MoES;** Dr. Wriddhiman Ghosh (Microbiology); ₹11,00,000; 2 years.

- **Identifying Systems-level Cellular Networks Involved in Neurotropic Flavi Virus-Host Interaction; DBT;** Dr. Sudipto Saha (Bioinformatics Centre); ₹1,20,000; 3 years.
- **miR-325: A distinct microRNA that controls T-regulatory cell development and function; SERB;** Prof. Gaurisankar Sa (Division of Molecular Medicine); ₹51,68,000; 3 years.

PATENTS

Dr. Anirban Bhunia and Dr. Santasabuj Das (Division of Biophysics).
Indian Patent No.: **462/DEL/2015**

STAFF NEWS

Appointments:

Academic

1. **Dr. Sidharth Kr. Prasad** joined as Assistant Professor in Department of Physics, (CAPPS) on October 16, 2015.

Non-academic

1. **Mr. Ashim Kr. Biswas** joined as Accounts & Finance Officer (on deputation) on July 16, 2014.

Retirements on Superannuation:

1. **Mr. Ashis Chakraborty**, A.O.-I, Administration on December 31, 2014.
2. **Mr. Debabrata Polley**, Helper-G, SAIF on December 31, 2014.
3. **Mr. Aniruddha Aich**, T.O.-II, Chemistry on January 31, 2015.
4. **Mr. Ashim Kr. Banerjee**, T.O.-II, Biochemistry on January 31, 2015.
5. **Mr. Shyamal Kr. Ghosh**, A.O., Administration on January 31, 2015.
6. **Mr. Sarat Ch. Bhuiyan**, Helper-G, Library on January 31, 2015.
7. **Mr. Pradip Kr. Karmakar**, T.O.-II, SAIF on February 28, 2015.
8. **Mr. Fulchand Sardar**, Helper-G, Workshop on April 30, 2015.
9. **Mr. Nikhilesh Roy Ghatak**, A.R.-I, Chemistry on May 31, 2015.
10. **Prof. Sampa Das**, Sr. Professor, Division of Plant Biology on June 30, 2015.
11. **Mr. Arun Kr. Nandi**, Helper-C, Library on July 31, 2015.
12. **Mrs. Kanan Singh**, Helper-B, Division of Molecular Medicine on July 31, 2015.
13. **Mr. Jaideb Kr. Chattopadhyay**, T.O.-II, CIF on August 31, 2015.
14. **Sri Nageswar Das**, Helper-D, Workshop on September 30, 2015.
15. **Prof. K.P. Das**, Sr. Professor, Chemistry on September 30, 2015.
16. **Dr. Tapas Kumar Ghose**, Professor, Division of Plant Biology on October 31, 2015.
17. **Mr. Tapan Datta**, Engineer-B, Administration on October 31, 2015.
18. **Mr. Raj Kishore Lenka**, Helper-E, MEF on October 31, 2015.

FORTHCOMING EVENTS

- The 13th Conference of the **Asian Crystallographic Association (ASCA 2015)** would be held at Science City, Kolkata, during December 5-8, 2015. The conference (www.asca2015.org) secretariat is located at Bose Institute. Contact person: Prof. P. Chakrabarti (Biochemistry).
- **10th Winter Workshop on Astroparticle Physics** to be held during December 17-19, 2015 at Mayapuri, Darjeeling, Bose Institute. Contact person: Dr. Supriyo Das (Physics/CAPSS).
- **10th School on Astroparticle Physics** to be held during December 21-29, 2015 at Mayapuri, Darjeeling, Bose Institute. Contact person: Dr. Supriyo Das (Physics/CAPSS).
- **Workshop on FAIR Electronics** to be held during January 11-12, 2016 at Mayapuri, Darjeeling, Bose Institute. Representatives from Indian groups participating in all four FAIR experiments as well as experts from industries will meet to discuss requirements and current solutions on electronics for the experiments. This meeting is going to be a crucial step towards the final design for the experiments. Contact person: Prof. Sanjay K Ghosh (Physics/CAPSS).
- Bose Institute Library is going to arrange a conference on Koha (an open source software) – **"International Conference on Koha"** on January 23-24, 2016, in collaboration with Bengal Library Association, Kolkata. Contact person: Dr. Banhisikha Chaudhuri (Library).
- **Workshop and Hands-on Training on DNA Fingerprinting and Diagnostics of Medicinal Potential in Plants** will be held during August 2016 at the Main Campus, Bose Institute. Contact person: Prof. Swati Sen Mandi (Division of Plant Biology).