

বসু বিজ্ঞান মন্দির

बसु विज्ञान मन्दिर

# BOSE INSTITUTE

## Newsletter

No. 54-55

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A NEWSLETTER OF BOSE INSTITUTE

### FROM THE DIRECTOR'S DESK



I am very delighted to convey warm welcome to all the students, faculty & staff of Bose Institute by presenting this edition of Newsletter of the Institute. I sincerely express my gratitude to the

fellows and academic members of staff of the Institute for their dedicated endeavours, not only to meet the research needs of the Institute and the country as well, but also to fulfil the objectives set by our legendary founder Acharya Jagadis Chandra Bose.

I am really overwhelmed to experience that this prestigious research Institute is going to complete a period of 105 years on 30<sup>th</sup> November, 2021. One must undoubtedly admit that it is possible for a research Institute to successfully continue its journey that was commenced more than a century ago, only when the very Institute has significant contributions for advancement of science and technology of the nation. Bose Institute having landmark achievements in multi-disciplinary research activities symbolizing glorious past, has been playing pivotal role for upliftment of the research level of the country in addition to the pioneering efforts in the interdisciplinary areas of science as well as manifold R&D activities. The Institute continues to render outstanding contributions to the country by accomplishing its cutting-edge scientific research efficaciously for more than hundred years.

I am happy to share a good news of our Institute – finally we have been able to become successful in shifting to our Unified Academic Campus at Salt Lake, Kolkata on 14<sup>th</sup> July, 2021. Henceforth, all administrative and academic

#### Editorial Board

Members of J. C. Bose Center  
(Comprising Publication and Museum Unit)

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Registrar (Officiating), Bose Institute  
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activities will be accomplished from this new campus. Shifting to our new campus was really a long dream for us and finally we have translated this dream into practice quite efficiently.

During the year 2020-21 Bose Institute had produced 17 Ph.D students and trained 16 research manpower (B.Tech., M.Tech., M.Sc., Diploma etc.) who are successfully leading their professional lives all over the world. It is noteworthy to focus the major accomplishments of Bose Institute in the areas viz. Neurodegenerative Disorders, Cancer, Infectious Disease, Environmental Science and Microbiology, Bioinformatics, Plant and Agricultural Science, Physical Science, COVID-19 specific studies, Autoimmune and Metabolic Disorders etc.

It is praiseworthy to mention here that Government of India has authorised Bose Institute, Kolkata as the nodal implementing institution at the Indian end of the project titled “India’s participation in the construction of the Facility for Antiproton and Ion Research (FAIR) at Darmstadt, Germany”.

I am grateful to all the academic and non-academic staff members of the Institute for their untiring efforts during COVID-19 pandemic period with full of uncertainties, disruptions, lockdown and economic hardship even when our survival was quite vulnerable. A considerable amount of R&D activities including collaborative programmes at national and international level, have been made effectively during this stressful period. Besides, a number of lectures/colloquia/webinars by renowned scientists were successfully hosted/organized by Bose Institute through virtual mode viz. Prof. Mahan Maharaj, School of Mathematics, Tata Institute of Fundamental Research, Mumbai, delivered Professor D M Bose Memorial Lecture 2020 on “Hyperbolic Geometry and Chaos in the Complex Plane” on 26-11-2020, the 136<sup>th</sup> Birth Day of Professor Debendra Mohan Bose; Dr. Gopal Mukherjee, Variable Cyclotron Energy Centre, Kolkata, delivered a colloquium talk on “Manifestation of Classical Motions in the Quantum World of Nuclei” on 24-09-2020; Dr. Janos Kriston-Vizi, University College London delivered a webinar talk on “Imaging informatics in Biological Research and Drug Discovery” on 23-09-2020; Prof. Abhijit Majumder, Wayne State University, Michigan, USA delivered a webinar talk on “A Framework for Precision Exploration of the Quark Gluon Plasma” on 03-11-2020; Dr. Birendranath Banerjee, Scientist and Founder &



MD in DNA Life Sciences Private Limited, delivered a webinar talk on “21st Century Life Style monitoring: A giant leap from Blood to DNA” on 21-12-2020; Dr. Nimesh Gupta, Scientist, National Institute of Immunology, New Delhi, delivered a webinar talk on “A deep dive into the vaccines and its immunology” on 14-01-2021; Prof. Tamir Tuller, Head of the Laboratory of Computational Systems and Synthetic Biology, Tel Aviv University, delivered a webinar talk on “Computational modelling of novel gene expression codes and their applications” on 17-02-2021 etc.

Last but not the least, we should not suffer in any kind of complacency whatsoever. Notwithstanding our stellar performance in the past, sustainable developments in some of the critical research areas need to be made for greater acceptability. Effective governance in the internal administration of the Institute by way of revamping administrative infrastructure ensuring accountability are essentially required for its smooth and limpid functioning. An upgraded information system that facilitates decision making in various integral academic and administrative spheres through its conveniently accessible database alongwith well-connected network, needs to be implemented.

As we move on to be inspired and enriched by the legacy of Acharya J. C. Bose’s versatile contributions, we may conclude by his remark:

*“I have dedicated my Institute to the nation and I have done all that lay in my power. It now remains with my countrymen to determine its fuller expansion, so that within its precincts may be gathered seekers after truth from all parts of the world...”*

With best wishes,

Prof. (Dr.) Uday Bandyopadhyay  
Director

## COMPLETION OF SHIFTING AT UNIFIED ACADEMIC CAMPUS, SALT LAKE



After a century since its establishment, Bose Institute looks forward to being a strong part of India's future scientific focus. To facilitate and expand research in a new dimension using sophisticated instruments and infrastructure, the need of establishment of a new Campus was felt where all the research divisions will operate under one umbrella. A Detailed Project Report was submitted to the DST for the Unified Academic Campus on a plot of land measuring 5.0 acres at Plot No. 80, Block EN, Sector-V, Salt Lake City, Kolkata 700 091, that had been allotted by the Government of West Bengal. The project was finally approved by the Department of Science & Technology, Government of India. Dr. Manmohan Singh, Hon'ble Former Prime Minister of India, in presence of Shri M. K. Narayanan, former Hon'ble Governor of West Bengal, Late Bilas Rao Deshmukh, the then Hon'ble Minister of Science & Technology, Dr. Aswini Kumar, Hon'ble Minister of State for Science & Technology, Government of India and many other dignitaries, laid the foundation stone of the Unified Academic Campus of Bose Institute on June 02, 2012.



As a part of the Centenary celebration of the Institute in 2017, Shri Pranab Mukherjee, Hon'ble Former President of India further inaugurated the Unified Campus on June 29, 2017 in the august presence of Dr. Harsh Vardhan, Honourable Minister of Science &



Technology, Earth Science, Environment, Forest and Climate Change, Government of India, Shri Y. S. Chowdary, former Hon'ble Minister of State of Science & Technology and Earth Science, Government of India, and Prof. Ashutosh Sharma, Secretary to the Government of India, Ministry of Science & Technology. The former Hon'ble Governor of West Bengal, Shri Keshari Nath Tripathi, presided over the function.

Finally, the entire construction of the building including reconstruction of Laboratories, shifting of research equipments, instruments and other infrastructure, was ready. All administrative and Academic activities are henceforth accomplished from this Campus since 14<sup>th</sup> July 2021. This is indeed a milestone achievement for Bose Institute.



## OUTSTANDING STUDENT AWARDS 2021

Sir Nilratan Sirkar Prize awarded to:



**Ms. Sreyashi Majumdar**  
Division of Bioinformatics  
(Under Dr. Sudipto Saha)

Prof. B. B. Biswas Outstanding Student Award presented to:



**Mr. Anindya Dutta**  
Department of Biophysics  
(Under Dr. Subhrangsu Chatterjee)

**Prof. Shyamadas Chatterjee Outstanding Student Award  
(in the area of Physical and Environmental Science) awarded to:**



**Mr. Sreyan Raha**  
Department of Physics  
(Under Prof. Achintya Singha)

## CURRENT EVENTS

### 104<sup>th</sup> Foundation Day



The 104<sup>th</sup> Foundation Day of Bose Institute was observed on November 30, 2020. Prof. (Dr.) Uday Bandyopadhyay, Director, delivered the Welcome Address and presented the Institute Report, adhering to all the Covid-19 protocols. On this occasion four students delivered talks:

- (i) Dipita Bhattacharyya on *Invisible players in Parkinson's disease probed by dark state NMR*;
- (ii) Nilanjan Banerjee on *De-novo designed short peptides for promoting apoptosis in cancer cells*;
- (iii) Ayan Biswas on *Noise and Information in Genetic Network Motifs*;
- (iv) Pracheta Singha on *Quark Gluon Interactions*.

## National Science Day 2021

Bose Institute observed **National Science Day** on February 28, 2021, through various activities. The theme of the National Science Day 2021 was "Future of STI: Impacts on Education, Skills, and Work". A Webinar was organised by Bose Institute on March 01, 2021. The talk was delivered by Prof. Soumitra Sengupta, IACS, Kolkata on '**Gravitational Wave – a new era of communication**'. The programme concluded with a Debate (on the motion: Health websites are reliable sources of information) and a Quiz conducted by the Bose Institute Research Scholar's Forum.

## Observance of Golden Jubilee Year Celebration of Department of Science and Technology



**BOSE INSTITUTE**  
CELEBRATES  
**GOLDEN JUBILEE**  
OF  
**DEPARTMENT OF SCIENCE & TECHNOLOGY**  
GOVT. OF INDIA

DST@ 1971-2021

- Webinars
- A film on glorious history of Bose Institute
- Colloquium
- Publication of commemoration books/monographs.
- Seminar series
- Rural Biotechnology Training Workshop
- Popular lectures
- Advanced workshop on microscopy and imaging
- Popularization of science among school students

3<sup>rd</sup> MAY 2020 TO 2<sup>nd</sup> MAY 2021

- As a part of **Golden Jubilee Celebration of DST**, Bose Institute organized **Hands on Training Programme on Mushroom cultivation, Apiculture, Vermicompost production and Fishery** at Falta Experimental Farm during March 17-19, 2021.
- "**A FILM ON THE GLORIOUS HISTORY OF BOSE INSTITUTE**"- **Historical perspectives and current activities**, Vigyan Prasar is running a series made on various institutes of DST, on the occasion of the Golden Jubilee Year Celebration of the DST. These films are launched (Every Monday and Wednesday) and are available to watch on India's 24x7 national science channel on the internet, called India Science ([www.indiascience.in](http://www.indiascience.in)). The remarkable voyage of Bose Institute was featured on July 7, 2020 at 6:00 pm.

## International Day of Yoga

International Day of Yoga was observed on June 21, 2021 at Unified Academic Campus of Bose Institute.

## Independence Day



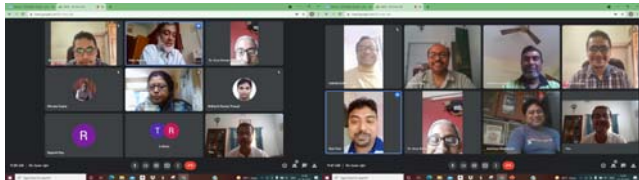
Independence Day 2021 was observed on August 15, 2021 at all Campuses of Bose Institute.

## Hindi Pakhwada

Bose Institute organized "Hindi Diwas and Pakhwada" during September 14 to September 28, 2021. "Hindi Diwas" was observed on September 14, 2020. The Director, BI welcomed all the scientists and staffs of the Institute with his Inaugural Address. The Registrar (Officiating), the Deputy Registrar, the Chair, Hindi Implementation Committee and Members of Bose Institute, Kolkata were present and delivered speeches about Hindi Diwas. A Pledge taking ceremony was presented in a virtual mode via Internet. The following two weeks were celebrated as "Hindi Pakhwada". Essay/Poem/Article writing competitions in Hindi were organized during these weeks.



## Rashtriya Ekta Diwas (National Unity Day)



“Rashtriya Ekta Diwas” (National Unity Day) was observed by Bose Institute, Kolkata on October 31, 2021 to commemorate the birth anniversary of Sardar Vallabhbhai Patel. A Pledge taking ceremony was organized in a virtual mode via Internet.

## Vigilance Awareness Week



The Vigilance Awareness Week was observed during October 26 – November 1, 2021. As a part of this programme, the Integrity Pledge taking ceremony was organized by Bose Institute on October 26, 2021.



Azadi Ka Amrit Mahotsav is an initiative of the Government of India to celebrate and commemorate 75 years of progressive India and the glorious history of its people, culture and achievements.

This **Mahotsav is dedicated to the people of India** who have not only been instrumental in bringing India thus far in its evolutionary journey but also hold within them the power and potential to enable Prime Minister Modi's vision of activating India 2.0, fuelled by the spirit of **AatmaNirbhar Bharat Abhiyan**. The official journey of “Azadi ka Amrit Mahotsav” commenced on 12th March, 2021 which started a 75 week countdown to our 75th anniversary of Independence and will end post a year on 15th August, 2023.

## National Science Exhibition 2021



Bose Institute participated in the 24<sup>th</sup> National Science Exhibition”, held during 28<sup>th</sup> to 31<sup>st</sup> October, 2021 at Science City Maidan maintaining all the Covid-19 protocols. This exhibition was organized by the Central Calcutta Science and Cultural Organisation for Youth on the occasion of 75 years of Indian Independence on the theme “A journey towards a Magnificent India in 75 years.” The pavilion of Bose Institute displayed a variety of Scientific Posters as well as history of Bose Institute. Publications of Bose Institute were kept for sale.

## IV ALICE-India School on Quark-Gluon Plasma



The High Energy Physics group of the Department of Physics, Bose Institute organised “**IV ALICE-India School on Quark-Gluon Plasma**” during 08<sup>th</sup> to 20<sup>th</sup> November, 2021 through Virtual mode, as a part of celebration of 75<sup>th</sup> year of Independence “AZADI KA AMRIT MAHOTSAV”.

The school aimed at providing the basic knowledge and techniques necessary for carrying out research in the experimental High Energy Physics (EHEP). It included hands-on sessions and special lectures delivered by distinguished speakers from Institutes/Universities in India and abroad.



## Orientation Programme Bose Institute Ph.D. Coursework



As a part of celebration of 75<sup>th</sup> year of Independence “AZADI KA AMRIT MAHOTSAV” Bose Institute organised “**Orientation Programme (Bose Institute Ph.D. Coursework)**” on November 17, 2021. Keynote Lecture on **The Brownian Motion of Corona and Quarks**, was delivered by **Prof. Jan-e Alam** from Variable Energy Cyclotron Centre (VECC), Department of Atomic Energy, Salt Lake City, Kolkata.

## Flag off ceremony of Ultra High Vacuum Chambers to Facility for Anti-Proton and Ion Research (FAIR), Darmstadt, Germany



Bose Institute is responsible for coordinating the Indian contribution towards the construction of “Facility for Anti Proton Ion Research” at Darmstadt, Germany and subsequent participation of Indian Institutes/Universities in the experiments. To that end, Department of Science & Technology, Government of India has sanctioned Rs. 615 crores to Bose Institute, for the duration 2021-26.

Twenty two Ultra high Vacuum chambers produced by the Vacuum Technique Private Ltd Bangalore were flagged off to the Facility for Antiproton and Research (FAIR) at Darmstadt, Germany by Prof. Uday Bandyopadhyay, Director, Bose Institute, Kolkata on 10<sup>th</sup> November 2021 in a brief ceremony at VT



complex Bangalore. Dr. K N Vyas, Chairman Atomic Energy Commission & Secretary, Department of Atomic Energy, Government of India, in a brief message sent on the occasion expressed his happiness for reaching this important milestone.

Dr. Subhasis Chattopadhyay, VECC, Kolkata, Prof. Rajarshi Roy, BI-Kolkata and Mr. Gaurav Aggarwal of DST, New Delhi attended the event in person, Dr. Emmanuel Rosy Head, Project Management Office of FAIR joined online alongwith two other FAIR colleagues i.e, Mr. Andreas and Mr. Thomas Hahn. Officials of VT Bangalore welcomed the guests on this occasion, India, as a founder member country of FAIR is the 3<sup>rd</sup> largest contributor in building this facility. This consignment is a one of the several advanced technology equipment being built in India to be used in the upcoming accelerator facility in Germany, which is the largest upcoming basic science research facility globally.

## Nobel Lecture - 2021

On the occasion of 75 years of completion of Indian Independence (The Azadi Ka Amrit Mahotsav), Bose Institute organised “**Lectures on Nobel prize winning works in 2021**” by Prof. Anup Kumar Misra (Chemistry), Prof. Soumen Roy (Physics) and Dr. Smarajit Polley (Physiology) on November 18, 2021.

## 137<sup>th</sup> Birthday of Prof. Debendra Mohan Bose



As a part of **Azadi Ka Amrit Mahotsav**, Bose Institute observed 137<sup>th</sup> Birthday of Prof. Debendra Mohan Bose on November 26, 2021. **Prof. Amitava Raychaudhuri**, Emeritus Professor, Department of Physics, University of Calcutta, Kolkata, graced the occasion as Guest of Honour and delivered the **D. M. Bose Memorial Lecture 2021** on the topic “**Musings on Mass**”. Prof. Soumitra SenGupta, Amal Kumar Raychaudhuri Chair Professor, School of Physical Sciences, Dean (Faculty affairs and Staff matters), Indian Association for the Cultivation of Science (IACS), Kolkata presided over the programme.

**Webinars organized by the Division of Bioinformatics**

- i. Webinar on **“Network Biology for Drug discovery from Indian Medicinal Plants”** delivered by **Dr. Areejit Samal**, Computational Biology Group, The Institute of Mathematical Sciences (IMSc), Chennai, entitled **“A network perspective on biologically-relevant chemical spaces”** on December 7, 2020.
 

**Dr. Sohini Chakraborty**, NYU Grossman, School of Medicine, USA, on “Cellular heterogeneity in hematopoietic stem cell aging”.
- ii. Webinar on **“Science. Research & Entrepreneurship”** delivered by **Dr. Birendranath Banerjee**, Scientist and founder & Managing Director, DNA Life Sciences Private Limited, entitled **“21<sup>st</sup> Century Life Style monitoring: a giant leap from Blood to DNA”**. The session was chaired by Prof. Gourisankar Ghosh, University of California San Diego, and Advisor, Bio Bharati Life science, on December 21, 2020.
 

**Dr. Atanu Maity**, IIT, Bombay on “Stapled diet for entropic penalty of protein-peptide binding”.

Prof. Sujoy Kumar Dasgupta, BI chaired the session.
- iii. Webinar on **“Editing the Molecular Detective Stories”** delivered by **Dr. Debojyoti Chakraborty**, Senior Scientist, CSIR-Institute of Genomics and Integrative Biology, New Delhi, entitled **“Rewriting the code of life”** which included the story of the FELUDA kit development for COVID19 detection. The session was chaired by Professor Joyoti Basu, Bose Institute, Kolkata on December 30, 2020.
 

vii. Webinar on **“Computational Biology Approaches to Combat COVID-19”**, on June 12, 2021; Speakers:  
**Debarati Paul**, Research Fellow, BI on “Multi conformation representation of Covid-19 Mpro promising candidate for drug repurposing”.  
**Troyee Das**, Research Fellow, BI on “Repurposed drugs and Nutraceuticals targeting envelope protein: a possible therapeutic strategy against COVID-19”.  
**Dr. Soumita Poddar, Asst. Professor, Raniganj University** on “Explicating Molecular Cross Talk during Co-conspiracy of Atherosclerosis and COVID-19”.  
**Dr. Sudipto Saha, Associate Professor, BI** on “LHSpred: a web based application for predicting lung health severity”
- iv. Webinar on **“The Secrets of Covid-19 Vaccines”** delivered by **Dr. Nimesh Gupta**, Scientist, National Institute of Immunology, New Delhi, entitled **“A deep dive into the vaccines and its immunology”**. Dr. Santasabuj Das, Scientist-F, National Institute of Cholera and Enteric Diseases, Kolkata chaired the session on January 14, 2021.
 

Prof. Kaushik Biswas, Bose Institute chaired the session.
- v. Webinar on **“Gene Expression Models”** delivered by **Prof. Tamir Tuller**, Head of the Laboratory of Computational Systems and Synthetic Biology, Tel Aviv University, entitled **“Computational modeling of novel gene expression codes and their applications”**. Prof. Pinak Chakrabarti, J.C. Bose Fellow, BI chaired the session on February 17, 2021.
 

viii. Webinar on **“Perspectives on SARS-CoV2”**, on June 22, 2021, delivered by **Prof. Syamal Roy**, Emeritus Scientist, IICB, Kolkata on **“Paradise Lost to Paradise Regained- a long haul to know many unknowns about SARS-CoV2”**. The session was chaired by Prof. Dipankar Nandi, Indian Institute of Science, Bangalore.
- vi. Webinar on **“Current Research Trend in Bioinformatics- from basics to application”** on May 29, 2021; Speakers:  
**Dr. Debasree Sarkar**, Emory University, Atlanta on “Single cell RNA-sequencing of Diabetic foot ulcers as a basis for understanding wound healing process”.
 

ix. Webinar on **“In-silico Approaches for Cancer Therapy”**, on September 14, 2021, delivered by **Prof. G.P.S. Raghava** on **“Computer-aided Solutions for Managing Treatment of Cancer”**, Head & Professor, Department of Computational Biology, IIIT, Delhi. The session was chaired by Prof. Pinakpani Chakrabarti, J.C. Bose Fellow, Bose Institute.

x. Webinar on **“Ripples in Life Sciences”** on October 25, 2021, delivered by **Dr. Dipyaman Ganguly**, CSIR-IICB, Kolkata on “May the force be with you” Piezol for mechanosensing in immune cells. The session was chaired by Prof. Gautam Basu, Bose Institute.



### Bose Institute Colloquium (through virtual mode)

- i. **Professor Ranjith Padinhateeri** from Indian Institute of Technology, Bombay, delivered Bose Institute Colloquium lecture on “**Physical models to understand chromatin assembly and inheritance of epigenetic information**” on August 25, 2021.
- ii. **Professor Justin Lathia** from Cardiovascular & Metabolic Sciences, Lerner Research Institute, Cleveland Clinic, Cleveland, OH, USA, delivered Bose Institute Colloquium lecture on “**Sex differences inform glioblastoma progression and reveal potential new immunotherapies**” on November 5, 2021 through the Google Meet platform.

### CAPSS Seminar Series organized by Bose Institute Research Scholar's Forum in virtual mode

1. **Prof. Subhasis Chattopadhyay** FNASc, Head, High Energy Experimental Physics and Applications Group, VECC. delivered a Lecture entitled “**Small and big Science: An Experimentalist's View**” on December 12, 2020.
2. **Prof. Sibaji Banerjee**, Asst. Professor, St. Xavier's College, Kolkata delivered a Lecture entitled “**Chandrasekhar Limit for Quark Stars: a model building approach**” on December 19, 2020.

### RECENT AWARDS AND HONOURS

- **Dr. Sidharth K. Prasad** (Physics) appointed as the Physics Coordinator of the ALICE-STAR-India Collaboration on January 01, 2021.
- **Dr. Saikat Biswas** (Physics) (i) appointed as one of the judges for selecting the best posters in the DAE-HEP symposium organized by NISER, Jatni; (ii) selected as member of the Advisory committee of "RAPID2021: Advanced Radiation Detector and Instrumentation in Nuclear and Particle Physics Experiments" workshop.
- **Shreya Roy** (Physics) received GET\_ Involved internship at FAIR, Germany to work on 'Preparation of CBM software for the mCBM data'.
- **Abhi Modak** (Physics) received “Best Poster Presentation Award” in the DAE-HEP symposium organized by NISER during 14-18 December, 2020.
- **Debjani Banerjee** (Physics) received “First prize in oral Presentation” in the National Conference on Fundamental and Applied Sciences organized by SVNIT, Surat during 20-21 October, 2021.
- **Sayak Chatterjee** (Physics) selected for the Highlight talk on “Physics performance studies with MuCh setup” in the 37th CBM Collaboration Meeting (online). He is the only selected student from India.
- **Dr. Abhijit Chatterjee** (Environmental Sciences) selected as the member of Editorial Board of the prestigious international journal, “Earth and Space Chemistry” of American Chemical Society.

### RECENT PH.D. DEGREES AWARDED

- **Ananya Jana** (Biochemistry) Identification and Characterization of Proteins Involved in Vesicular Trafficking Events of *Giardia lamblia*. Supervisor: Prof. Srimonti Sarkar.
- **Sayani Sarkar** (Biochemistry) A Biochemical And Structural Study on Ubiquitination Activities by RING E3 Ligases. Supervisor: Prof. Ajit Bikram Datta.
- **Aritra Deb** (Bioinformatics) Role of Regulatory RNAs in Mammalian Development. Supervisor: Dr. Zhumur Ghosh.
- **Debangana Chakravorty** (Bioinformatics) Bioinformatics Based Knowledge Map of C-MYC Regulatory Networks and Modulators. Supervisor: Dr. Sudipto Saha.
- **Swapna Bera** (Biophysics) Structural Insights of A $\beta$  Peptides in Membrane: Understanding the Role of Fibrillation in Alzheimer's Pathogenesis and Designing of Peptides for A $\beta$  Fibril Inhibition. Supervisor: Prof. Anirban Bhunia.
- **Bhisma Narayan Ratha** (Biophysics) Peptide Based Biophysical Studies and Inhibitor Designing for Signalling and Amyloidogenic Class of Proteins. Supervisor: Prof. Anirban Bhunia.
- **Arindam Roy** (Environmental Sciences) Physical and Chemical Characterization of Wet Precipitation and its Interaction with Aerosol over Eastern Himalaya, India. Supervisor: Dr. Abhijit Chatterjee.

- **Satamita Deb** (Microbiology) Exploration of Microbial Regulatory Modules in Gene Expression for Biotechnological Application. Supervisor: Prof. Tapan K. Dutta.
- **Arindam Dutta** (Microbiology) An Insight Into Evolutionary Relationships of Naphthalene and Nitroarene Dioxygenase. Supervisor: Prof. Tapan K. Dutta.
- **M. J. Rameej** (Microbiology) Molecular Biology of Chemolithotrophic Sulfur Oxidation by *Paracoccus thiocyanatus* SST. Supervisor: Dr. Wriddhiman Ghosh.
- **Subhrangshu Mandal** (Microbiology) Exploration of Extreme Habitats for Novel Sulfur Chemotrophs. Supervisor: Dr. Wriddhiman Ghosh.
- **Baijayanti Ghosh** (Molecular Medicine) Protein Quality Control Machinery In Modulation Of Spinocerebellar Ataxia Type 3 Pathogenesis. Supervisor: Prof. Atin Kumar Mandal.
- **Soumya Jyoti Banerjee** (Physics) Structural aspects of complex networks and their applications. Supervisor: Prof. Soumen Roy.
- **Rajdeep Kaur Grewal** (Physics) Studies on Biological Networks. Supervisor: Prof. Soumen Roy.
- **Saptarshi Sinha** (Physics) Competition and cooperation in microbes. Supervisor: Prof. Soumen Roy.
- **Rathijit Biswas** (Physics) Study of jet cross-sections and properties in hadronic and heavy-ion collisions with ALICE at the Large Hadron Collider. Supervisor (s): Prof. Sibaji Raha and Prof. Supriya Das.
- **Deeptak Biswas** (Physics) Dynamical evolution of matter at extreme conditions. Supervisor: Prof. Sanjay Kr. Ghosh.
- **Pooja Bhattacharjee** (Physics) Study of Potential Self Annihilation Signal from Dark matter Particles in some Prospective Astrophysical Dark matter Sources. Supervisor: Dr. Partha Sarathi Joarder (Retd.) and Prof. Dhruva Gupta (Joint Supervisor).
- **Rwitie Mallik** (Plant Biology) Investigating The Role of AtHMGB15 (AT1G04880) Protein In Transcriptional Regulation of Cold Stress Responsive Genes. Supervisor: Prof. Shubho Chaudhuri.
- **Sananda Bhattacharya** (Plant Biology) Development of low phytate rice for increment of bio-available phosphorus and other nutrients. Supervisor: Prof. Gaurab Gangopadhyay.
- **Dibya Mukherjee** (Plant Biology) An insight into different survival strategies of *Ustilago maydis* under conditions of stress. Supervisor: Dr. Anupama Ghosh.

## GRANTS RECEIVED

- Diversity and distribution of antibiotic resistance genes in the sundarban mangrove estuary: coordination of anthropogenic and evolutionary influences; CSIR ; Dr. Abhrajyoti Ghosh, Department of Biochemistry; Rs. 23,50,000; 03 years.
- Setting up a State-of-the-Art CryoEM Regional/National Facility in Eastern Region at Bose Institute: Transforming the Structure-guided Drug Discovery and Therapeutics Research Landscape in India; SERB; Dr. Smarajit Polley, Department of Biophysics, Prof. Atin Kumar Mandal, Division of Molecular Medicine, Prof. Jayanta Mukhopadhyay, Department of Chemistry; Rs. 28,60,33,520; 05 years.
- Characterizing the interaction between Phosphodiesterase 8(PDE8A) and 14-3-3 with CRAF: Gaining insights into CRAF regulation; DBT(W.B.); Prof. Atin Kumar Mandal, Division of Molecular Medicine; Rs. 21,40,000; 03 years.
- Improvement and broad-scale implementation of different biotechnology-oriented programmes for the socio-economic upliftment of Scheduled Tribe community of West Bengal; DST; Prof. Pallob Kundu (PI), Prof. Gaurab Gangopadhyay (Co-PI) and Prof. Shubho Chaudhuri (Co-PI), Division of Plant Biology; Rs. 14,01,59,760; 03 years.
- Unravelling the mechanism of action of LINC00273 (Long intergenic Non Coding RNA) in inducing Epithelial to Mesenchymal Transition in Cancer; DBT; Dr. Subhrangsu Chatterjee, Department of Biophysics; Rs. 69,28,000; 03 years.
- India's participation in the construction of the Facility for Antiproton and Ion Research (FAIR) at Darmstadt, Germany; DST-DAE; Director, Bose Institute; Rs. 6,15,00,00,000; 05 years.

Promotion:

1. Dr. Jayanta Mukhopadhyay promoted as Professor in Department of Chemistry w.e.f. 20.11.2020.
2. Dr. Atin K. Mandal promoted as Professor in Division of Molecular Medicine w.e.f. 20.11.2020.
3. Dr. Kaushik Biswas promoted as Professor in Division of Molecular Medicine w.e.f. 20.11.2020.
4. Dr. Subhra Ghosh Dastidar promoted as Professor in Division of Bioinformatics w.e.f. 20.11.2020.
5. Dr. Ajit Bikram Dutta promoted as Professor in Department of Biochemistry w.e.f. 20.11-2020.
6. Dr. Anirban Bhunia promoted as Professor in Department of Biophysics w.e.f. 20.11.2020.
7. Dr. Achintya Singha promoted as Professor in Department of Physics w.e.f. 20.11.2020.
8. Dr. Abhrajyoti Ghosh promoted as Associate Professor in Department of Biochemistry w.e.f. 20.11.2020.
9. Dr. Sanat Kumar Das promoted as Associate Professor in Environmental Sciences w.e.f. 20.11.2020.
10. Dr. Sudipto Saha promoted as Associate Professor in Division of Bioinformatics w.e.f. 20.11.2020.
11. Dr. Anupama Ghosh promoted as Associate Professor in Division of Plant Biology w.e.f. 20.11.2020.
12. Prof. Anup Kumar Misra promoted as Professor in Division of Molecular Medicine w.e.f. 30.04.2021.
13. Dr. Soumen Roy promoted as Professor in Physics w.e.f. 30.04.2021.

Retirements on Superannuation

1. Smt. Rina Roy, Administration on 31.12.2020.
2. Mr. Subrata Basak, Workshop on 31.12.2020.
3. Mr. Amartya Sen, Molecular Medicine on 31.12.2020.
4. Mr. Nagnarayan Yadav, Biophysics on 31.12.2020.
5. Prof. Mahadeb Pal, Professor, Molecular Medicine on 31.01.2021.
6. Sk. Mohammad Faruck, Workshop on 28.02.2021.
7. Smt. Sarama Pradhan, Bioinformatics on 28.02.2021.
8. Mr. Kalicharan Turi, Administration on 28.02.2021.
9. Mr. Jibananda Mondal, Bioinformatics on 28.02.2021.
10. Mr. Chandra Kanta Sasmal, Administration on 31.03.2021.
11. Mr. Sanjay Krishna Chaki, Administration on 31.03.2021.
12. Prof. Gautam Basu, Professor, Biophysics on 31.07.2021.
13. Prof. Sujay Kr. Das Gupta, Professor, Microbiology on 31.07.2021.
14. Smt. Tanima Modak Dhar, SAIF on 31.10.2021.

Observation of "International Day of Clean Air for Blue Sky" at West Bengal Pollution Control Board (WBPCB) on September 07, 2021 and Exchange of MoU



The UN General Assembly declared "International Day of Clean Air for Blue Sky" on September 07, 2021 was organised by West Bengal Pollution Control Board in

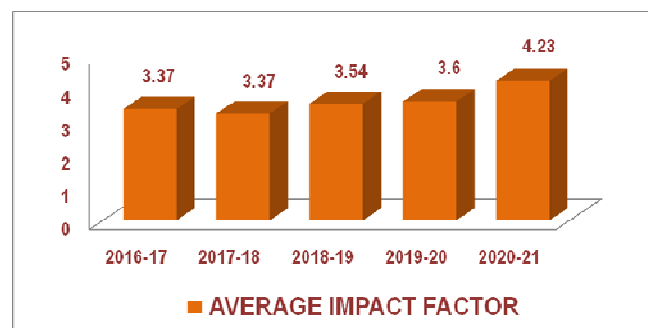
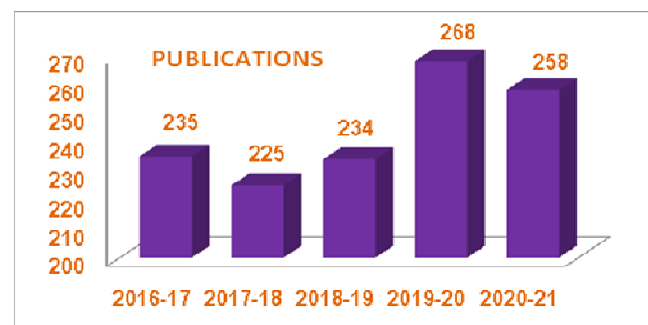
Association with Bose Institute, Department of Environment, Department of Urban Development and Municipal Affairs. The theme was "Healthy Air-Healthy Planet". Participants included school children, faculties from universities, Officials from Government, representatives from urban local bodies etc. Senior officers present in person were: Ms. Papiya Ghose Roy Choudhury, Additional Secretary, UD&MA; Mr. Debasish Chakraborty, Director General (Heritage & Environment), Kolkata Municipal Corporation; Dr. Abhijit Chatterjee, Associate Professor, Bose Institute,

Kolkata (as representative Nodal Scientist of Institute of Repute for Kolkata, Howrah and Barrackpore) and Dr. Dipanjana Moulik, SEE (Department of Environment). The program was also attended in person by students from Bose Institute and Officers and officials from WBPCB. The entire program was presided over by Dr. Kalyan Rudra, the Chairman, WBPCB and was also made live from the Face Book page of WBPCB.

MoU was exchanged between Bose Institute, WBPCB and Kolkata Municipal Corporation for Nation Clean Air Program for Kolkata on September 07, 2021. Dr. Abhijit Chatterjee is the Nodal Scientist for this national program of Govt. of India for the state of West Bengal. The MoU was exchanged in presence of Dr Kalyan Rudra, The Chairman, WBPCB and Mrs Papiya Ghose Roy Chowdhury, Additional Secretary, UDMA, Govt. of West Bengal.

## ACADEMIC INPUTS OF BOSE INSTITUTE

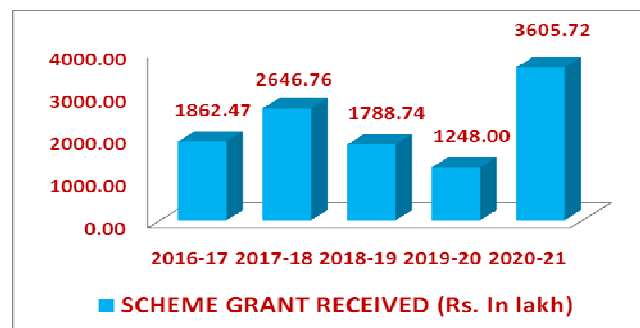
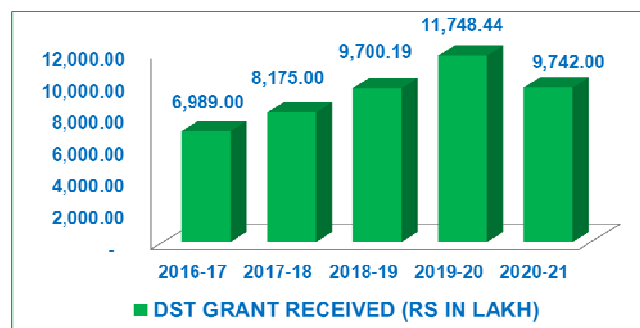
TOTAL PUBLICATION 2020-21	258
AVERAGE PUBLICATION IMPACT FACTOR 2020-21	4.23
BOOKS/BOOK CHAPTERS/INVITED REVIEWS	20
PH.D.s AWARDED 2020-21	17
NO. OF MANPOWER TRAINED (B.TECH., M.TECH., M.SC., DIPLOMA ETC)	16
NO. OF SEMINARS, TRAINING, CONFERENCES, WORKSHOPS, WEBINARS ETC.	11



## FINANCIAL INPUTS OF BOSE INSTITUTE

ST GRANTS RECEIVED 2020-21	9,742
EXTRA MURAL GRANTS RECEIVED 2020-21	3,605.72
NO. OF ON-GOING EXTRA MURAL PROJECTS 2020-21	57
AVERAGE EXTRA MURAL PROJECTS PER FACULTY	1.50

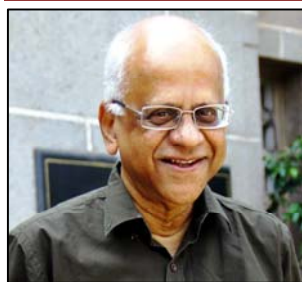
(Rupees in Lakhs)



82<sup>nd</sup> Acharya J.C. Bose Memorial Lecture will be delivered by Prof. Gautam R. Desiraju, Honorary Professor, Solid State and Structural Chemistry Unit, Indian Institute of Science, Bangalore

### Abstract

#### Science and Society. What does Bose Institute owe them?



Science and society are intimately linked and Acharya J. C. Bose's life and work exemplify this close relationship. Good science can only be done if the societal framework is conducive to carrying it out. The history of the 20<sup>th</sup> century contains

innumerable examples of situations throughout the world where a particular pattern of society distorted and deformed the activities of scientists. On the other hand, scientists have the heavy responsibility towards facilitating the condition and quality of life of the eight billion people in the

world. Scientists have rarely had the luxury of living in ivory towers and the best science has always emerged in response to urgent and pressing social and commercial needs. The founder of this institute lived in a tumultuous time when we were in the last stages of shedding our colonial vestige. Society was changing rapidly, even churning, and there was always the creative tension between the home and the world. India today a century later continues to be in a state of societal flux and we are still concerned about ourselves and our place in the wide world outside. Bose Institute therefore faces an extraordinary situation and is, as such, fully expected to play its part in the reawakening of the country of its founder.