

Department of Physics



Department of Physics (PG)



Department of Physics (UG)

The year 2017-18 was academically challenging for the department as it planned out meticulously the entire new syllabus with CBCS in Physics. The department continued its quest for learning and research. Research is one of the main strengths of the department with 10 scholars in the department, at present.

Publications in journals by Faculty Members

Dr. Tapati Dutta - 15

Dr. Sarbari Guha - 01

Invited Lectures

1. **Dr. Tapati Dutta** delivered a lecture on “IM Transition In Simulation of Patterns in a Drying Droplet” at a seminar organized by Sir J. C. Bose Trust and Cambridge University Press at Acharya Bhavan, Kolkata on 23rd February 2018.
2. **Dr. Sarbari Guha** presented a paper, “No ether Symmetry Analysis of FRW Model in Presence of Generalised Scalar-Gravity Interaction”, at International Conference on Post-Planck Cosmology: Enigma, Challenges and Visions, IUCAA, Pune, 9th – 12th October 2017.
3. **Prof. D.N. Bose** delivered the Material Society of India Medal Lecture as Material Scientist of the Year on 'Semiconductors - From Science to Technology' at Trichy on 14th February 2018.
4. **Prof. D. N. Bose** delivered an invited talk on 'Solar Energy - Past, Present & Future' at Asiatic Society, Kolkata on 5th March 2018.
5. **Prof. Gayatri Banerjee** presented a paper “Nanorods rich copper zinc tin sulphide (CZTS) grown by chemical route” at CMDAYS2017, 29 – 31st August 2018.

Seminars/symposium participated

1. **Dr. Tanaya Bhattacharyya** and **Dr. Suparna Roy Chowdhury** attended a one-day National Seminar on Contemporary Developments in Mathematics and Mathematical Sciences, Kolkata in May 2018.
2. **Dr. Suparna Roy Chowdhury** and **Dr. Tanaya Bhattacharyya** participated in UGC sponsored Winter School at University of Calcutta, February 26 – March 20, 2018.
3. **Dr. Aditi Ghosh** attended a Symposium on General Theory of Relativity and Gravitational Waves, held on 17th November 2017 at Lady Brabourne College, Kolkata
4. **Dr. Aditi Ghosh** participated in a workshop on Light and Photonic Materials, held on 25th May, 2018 at CSIR Central Glass and Ceramic Research Institute Kolkata.
5. **Dr. Tapati Dutta** served as Co-convenor of the National Summer School on Statistical Physics,

titled "Introducing Research Topics of Statistical Physics to Young Physicists", 4-15th June, 2018, at S.N. Bose National Centre for Basic Sciences, Kolkata.

6. **Dr. Soma Ghosh** served as a Member of the Organizing Committee for National Summer School on Statistical Physics, titled "Introducing Research Topics of Statistical Physics to Young Physicists", 4-15th June, 2018, at S.N. Bose National Centre for Basic Sciences, Kolkata.

National Summer School on Statistical Physics

On the occasion of celebration of the 125th birth anniversary of Professor Satyendra Nath Bose, a National Summer School on Statistical Physics “Introducing Research Topics of Statistical Physics to Young Physicists” was organized during 4 – 15 June, 2018 at S. N. Bose National Centre for Basic Sciences, Kolkata. The organizers were S. N. Bose National Centre for Basic Sciences, Saha Institute of Nuclear Physics, Jadavpur University and St. Xavier’s College (Autonomous). Dr. Tapati Dutta, Dean of Science and Ph.D. Coordinator, St. Xavier’s College, was the Co-convenor and Dr. Soma Ghosh, Head of the Department of Physics, was the member of the organizing committee. There were eminent speakers – Prof. Jayanta Bhattacharjee, IACS, Prof. Bikas Chakrabarti, SINP, Prof. Chandan Dasgupta, IISc, Prof. Indrani Bose, Bose Institute, Prof. Deepak Dhar, IISER, Pune and Prof. Robert Ziff, UM, Michigan among others. The topics presented varied over a wide range – turbulence, biological systems, glass transitions, non-equilibrium systems, self-organized criticality, percolation and polymers. A total of 5 final year B.Sc Physics Honours students and 1 M.Sc. Physics student successfully completed the school.

Seminars organized by the Department of Physics

1. The 5th Fr. Verstraeten Memorial Lecture was delivered by an eminent physicist Prof. Somak Raychaudhury, Director, IUCAA, Pune on September 15, 2017. The title of the talk was “Finding Black Holes”. Prof. Raychaudhuri



introduced the participants to exciting world of “Black Holes”. The participants were enthused to interact with the speaker after the lecture.

- The Department of Physics held its annual program SPECTRUM on March 24, 2018. The ninth issue of the departmental magazine HORIZON was inaugurated by Principal Rev. Dr. Dominic Savio, S.J. The invited speakers were Prof. Shibaji Raha, Former Director, Bose Institute, Kolkata and Prof. Kalyan K. Chattopadhyay, Jadavpur University.



Book Publication

Cambridge University Press published a book 'Photovoltaic Science & Technology' by **Prof. J. N. Roy** & **Prof. D. N. Bose** in January 2018.

Laboratory visit

The students of M.Sc. Physics 2nd year with Solid State Electronics specialization visited the laboratories of S.N. Bose National Centre for Basic Sciences, Kolkata, as a part of their annual laboratory visit program, to broaden their horizon in research activities in this field. There were demonstrations of instruments such as XRD and AFM which benefitted the students.

Student's achievements: During the academic session of 2017-18, the students of the Department of Physics excelled in co-curricular and extracurricular activities. The students received scholarships, participated in various workshops, completed projects at other academic institutes, attended and secured positions in various science camps and science fairs.



- Prof. Betti Hartmann**, IFSC, University of Sao Paulo, Brazil, delivered a talk “Cosmic Strings” on January 30, 2018.

Research Project

A CSIR Major Research Project entitled “Universal Thermodynamics in Modified Theories of Gravity”, for a period of 36 Months was granted in May 2018, with **Dr. Sarbari Guha** as the Principal Investigator.

Many students received the prestigious INSPIRE Scholarship, provided by the Government of India.

- Tamoghna Ray** and **Ayshi Mukherjee** of 1st Year, Physics Honours received the Jagadish Bose National Science Talent Search Senior Scholarship, by the Government of West Bengal.
- Tamoghna Ray** and **Debapriya Sil** of 1st Year, Physics Honours secured high ranks in the National Graduate Physics Examination, 2018 and

got a chance to attend an academic workshop at IIT Guwahati on Basic Physics in June 2018.

3. **Shaashwat Saraff, Ayaskanta Ghosh and Biju Saha** of 1st Year, Physics Honours, attended the National Initiative on Undergraduate Science Physics Camp, on various topics like Astronomy and Astrophysics, Theoretical and Experimental Physics. It was organized by Homi Bhabha Centre for Science Education, TIFR, Mumbai from 7th to 16th June 2018.
4. Students of B.Sc. 1st and 2nd year participated in the college model category in the Acharya Satyendranath Bose Memorial Science and Technology Fair, organized by Paschim Banga Bigyan Mancha in January 2018 and secured the first position.
5. **Akash K. Saha** of 2nd Year, Physics Honours, was awarded the Best Paper Award at the International Students' Conference on "Emerging Trends in Science and Technology" Institute of Engineering and Management, Kolkata, in February 2018.
6. **Shayantani Ghosh** of B.Sc. 2nd year gave a talk at International Students' Conference on "Emerging Trends in Science and Technology" at the Institute of Engineering and Management, Kolkata, in February, 2018.
7. **Shayantani Ghosh** of 2nd Year Physics Honours, carried out a summer project at S. N. Bose National Centre for Basic Sciences in June – July 2018.
8. **Chandan K. Bera** of 2nd Year, Physics Honours, participated in the State Senior Diving Championship, 2017 at Paschim Medinipur and secured the second position in High Board (10 mts) in men performance.
9. **Debayan Chatterjee** of 3rd year, Physics Honours, completed a project titled "Study of very low frequency signal characteristics during sunrise and sunset by using solar zenith angle profile" under the supervision of Dr. Sudipta Sasmal, Indian Centre for Space Physics, Kolkata.
10. **Writasree Maitra** of 3rd year, Physics Honours, participated in the Winter School on radio astronomy jointly conducted by IUCAA and NCRA.

11. **Abhiprasun Biswas** and Rahul Shah of 3rd year, Physics Honours, have been recognized by International Astronomical Search Collaboration for making valuable contributions to observations of Near – Earth objects and Main-Belt Asteroid discoveries. The research programme was held from June-17 to July-15 2017.

12. **Saloni Deepak and Anuradha Gupta** of 3rd year, Physics Honours, pursued a project under NIUS Camp 13 at HBCSE (TIFR).

13. **Avishek Mitra** of 3rd year, Physics Honours, had been the captain of the St. Xavier's College Football team and the top scorer at Xavier's Premier League, 2017.



Dr. Betti Hartmann delivering a lecture in the department

14. **Abhijeet Baidya** of M.Sc. Physics 1st Year participated in a Summer School Program organized by Institute for Plasma Research, May 28 – July 6, 2018.
15. **Souradeep Pal** of M.Sc. Physics 1st year completed a project under Dr. Saikat Biswas at Bose Institute, May-July 2018.
16. **Souradeep Pal** of M.Sc. Physics 1st year attended a workshop in Theoretical Physics at Ramkrishna Mission Vivekananda Educational & Research Institute in December 2017.
17. **Sreetama Das Choudhury** of M.Sc. Physics 1st year completed a project under Dr. Bhaswati Bhattacharyya at NCRA, TIFR, Pune.
18. **Souradeep Pal** of M.Sc. Physics, ranked 140 in All-India JEST, 2018.