



Annual Report 2018-19

भारतीय विज्ञान शिक्षा एवं अनुसंधान संस्थान कोलकाता
INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH KOLKATA
(An Autonomous Institute under Ministry of Human Resource Development, Govt. of India)



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Director's Message



It is a matter of great pleasure and privilege to present the report on various activities and accomplishments of Indian Institute of Science Education and Research (IISER) Kolkata during the financial year 2018-19. In the second year as the Director of IISER Kolkata, I note with gratitude the continued support of the Board of Governors, the Ministry of Human Resources Development, faculty, staff members and students enabling us to take the right initiatives towards the growth and development of the Institute.

Since the inception in 2006, IISER Kolkata, through an eventful journey, has been established as a premier academic institution of International standard. IISER Kolkata has now become a coveted institution for bright minds striving to fulfill their academic dreams both as students and as faculty members. I am happy to share with you that our family has grown to 114 faculty members, distributed in five academic departments, and supported by a dedicated team of 95 administrative staff members. In addition, we have a few visiting, adjunct and honorary faculty of great distinction, who add to the vibrant teaching and research atmosphere at IISER Kolkata. Our combined student strength is at a record high comprising of 917 BS-MS, 158 Integrated-PhD (IPhD), 3 MS in space physics and 351 Doctoral students. To maintain the momentum of growth, we are now in the final stages of introducing two new departments, namely, the department of humanities and the department of computer science. These departments will expand the horizon to explore newer research paradigms in one hand and to develop a holistic human resource for the future on the other.

IISER Kolkata is committed towards excellence in science and research and has shown exemplary performance in the year 2018-19. Our faculty members in all disciplines have embarked on a mission to address the most relevant scientific problems and have been able to contribute significantly, resulting in around 255 publications in the reporting year. It is also important to note that graduate students have independently published their research in peer-reviewed journals. There are also instances where

graduate students of different research areas have collaborated and have successfully addressed important problems. It is necessary to nurture the independence of young researchers and we are also working on the implementation of a scheme to attract post-doctoral researchers. I have strongly encouraged and provided support to faculty members and to research students simultaneously, ensuring that all can exercise the academic freedom essential for good research. I am happy to state that the excellent performance of our students and faculty members are getting recognized both nationally and internationally in the form of prestigious awards, fellowships and distinctions. IISER Kolkata's pursuit for excellence in research has been aptly recognized in the conferment of the prestigious Shanti Swarup Bhatnagar prizes to two of our faculty members from the Department of Chemical Sciences, Dr. Rahul Banerjee and Prof. Swadhin Mandal. In this reporting year, Prof. Punyasloke Bhadury has also been awarded the prestigious Swarnajayanti Fellowship Award in the discipline of Earth and Atmospheric Sciences. These achievements are commendable and reassuring, giving us confidence that we are in the right path in achieving our scientific goals.

It is a matter of great satisfaction that our faculty members are attracting support from national and International funding agencies. Thirty-seven new sponsored research projects/schemes amounting to Rs.17 crores have been obtained by our faculty members during the financial year 2018-19. It has enhanced our total tally to 87 number of ongoing projects with a total of Rs. 47 crores. A few notable projects obtained by IISER Kolkata: extramural projects Impacting Research, Innovation and Technology-2 [MHRD/DST], System Medicine Cluster [DBT], renewable and sustainable energy storage and production [SERB], development of diverse lab-on-chip platform [SERB], decoding the late Quaternary track of Indian monsoon in the Gangetic plain [SERB], bulk synthesis and discovery of COF materials [GAIL], etc. Many of these projects involve other national as well as international institutions and are interdisciplinary in nature. The detailed facts and figures of our research accomplishment are presented in the relevant section of this report. Several members of IISER Kolkata community have delivered plenary and invited lectures on their research accomplishments in India and abroad during this reporting year. IISER Kolkata supports such endeavors of not only for faculty members but also for students to get an exposure to a broader research scenario. Moreover, in IISER Kolkata, we hosted several conferences of international prominence and invited many eminent scientists to deliver lectures. Internationally renowned scientists visited our institute and delivered scientific lectures under the Global Initiative in Academic Networks (GIAN) initiated by the

Ministry of Human Resource Development recently. IISER Kolkata has also been honored for being selected for hosting a national leadership development program designed to create and nurture top level leaders of Indian higher education organizations called "Leadership for Academicians Programme (LEAP). The LEAP program had two weeks of Indian training at Kolkata followed by one week foreign training component in the Cambridge campus of Harvard Graduate School of Education.

An essential ingredient in sustaining knowledge-based research in developing countries is to foster academic research that has potential of translating into an industrial application. Since my joining at IISER Kolkata, I have taken the initiative to create a common platform such that our team of researchers can interact and share their expertise with prominent industrial R&D units. In this year, IISER Kolkata have signed agreements/MOUs with industrial organizations like Gas Authority of India Limited, Tata Steel Limited, Cipla Limited, Tata Medical Center to name a few. I also believe that research areas with the potential of industrial applications need to be initiated as start-ups which are being supported by the Government of India. The incubation centre, named, Research, Innovation and Scientific Entrepreneurship (RISE) Foundation IISER, with the generous support of the Department of Science and Technology is at work on building an ecosystem of start-ups involving our scientists, students and other entrepreneurs of the country. I am happy to note that RISE foundation IISER has been registered as a section 8 company in this financial year.

In the last financial year, IISER Kolkata, has strengthened their existing research facility by acquiring a number of state-of-the-art instrumentation facilities, namely, solvent purification system, fluorescence spectrometers, biomolecular interaction core facility, etc. Another significant addition is the supercomputing facility - **Dirac** with a configuration capable of achieving 80 Teraflops. All these facilities have been accommodated in the A J C Bose Research Complex and C V Raman Administration-cum-Academic Complex. At this point I would also like to mention that with efficient space management we have been able to create sufficient area to house new laboratories and facilities and generated an adequate number of classrooms and teaching laboratories.

IISER Kolkata faculty members are committed to developing a perfect human resource for the future. It is our responsibility to consider research and teaching with equal importance and it is the most rewarding experience to witness our pupil graduating in the convocation ceremony. The 6th convocation ceremony was held on 13 June 2018 where 133 students were awarded the BS-MS degree. In addition to that, 9 IPHD with MS only, 10 IPHD,

1 MS by research and 24 PhD students were conferred their respective degrees. The details are provided in the section on Academic Report. The 7th convocation of IISER Kolkata will be held on 11 June 2019. The number of graduating students is noteworthy and furthermore they are able to find appropriate academic positions advancing their research career. In this year, a large number of graduate students not only attended international/national conferences but have also obtained prizes for their presentations. A young group of BS-MS students participated in iGEM-2018 and have brought us a gold medal. Many BS-MS students have also obtained prestigious scholarships from MITACS, SPIE, DAAD, PMRF, etc. The success of our students makes us immensely happy about our effort in training the future generation at IISER Kolkata.

I am very pleased to report that the IISER Kolkata campus is one of the most vibrant that I have seen. IISER Kolkata being a predominantly residential campus all students have access to faculty members round the clock. There are a plethora of social activities that bond students and faculty in addition to their teacher-student interactions. Celebration of festivities, participation in sports and social awareness programme are done with enormous enthusiasm. This year, we held essay competitions for the Vigilance Awareness, 150th Birth Anniversary of Mahatma Gandhi and Education Day, Legal Rights for Women and also awarded a few Swachh Bharat Summer Internships. Every year IISER Kolkata organizes the unique science festival INQUIVESTA that has various stimulating science competitions and lectures. This year INQUIVESTA was a grand success and attracted many participants from other institutes in the country. IISER Kolkata conducted Jagadish Bose National Talent Search Workshop, International Day of Light and celebrated National Science day with a mission to spread scientific awareness. IISER Kolkata hosted the first ever Inter-

IISER Cultural Meet (IICM) during 21st-23rd December, 2018 attracting 500 participants from all seven IISERs. The students affairs committee (SAC) at IISER Kolkata is very active and in association with SPIC-MACAY organized several classical music concerts in campus. SPICMACAY IISER Kolkata Chapter hosted the West Bengal State Convention at IISER Kolkata from 25th -27th January, 2019. The sports complex and the newly built swimming pool are always busy with activities and the oncoming auditorium once ready will open the possibility of arranging bigger cultural programs. Various student-run clubs are running with the support of the institute administration for Arts, Music, Photography etc. to develop all-round and healthy young minds. A team of trained counselors and a psychiatrist in conjunction with faculty members ensure that no student is left behind in our celebration of the harmony in the campus.

We, as practitioners of science, are aware that it is our collective responsibility to improve our society and we give utmost importance to our outreach activities to reach all strata of the society. The student's initiative *Ek Pehal* for social activities that include free education to the local children is running successfully and have set an example for all to emulate.

I take this opportunity to thank all the members of our statutory bodies, Board of Governors, Finance Committee, Building Works Committee and Academic Senate for their continuous support and invaluable suggestions for various academic and administrative decisions. I thank the members of our internal and statutory audit team for checking the credibility of accounts. My sincere thanks to all students, faculty and staff members for their tireless efforts and significant contributions towards the growth and development of IISER Kolkata. Finally hearty congratulation to the members of the Annual Report committee for bringing this comprehensive report.





Faculty Affairs Report

Overview

The office of the Dean of Faculty Affairs (DoFA) is to facilitate routine service matters of the faculty members, recruitment of new faculty members and to look after the career advancement of the individual members and to promote their growth as a whole. This includes appointments, reappointments, tenure, promotion, service matters like leave, various certificates, pay fixation, service book, etc. Furthermore, DoFA acts as a bridge between the members of the faculty and the administration. The Office represents the DoFA's priorities and provides administrative oversight for various Institutional faculty requirement, evaluations, review processes, policies and procedures under which the Institute operates.

The Institute is proud of its mainstay – the Faculty members, who form a vibrant and cohesive group of outstanding academicians. In twelve years of its existence, IISER Kolkata has been able to attract talented and promising faculty members with large diversity, specialization and research experience from prestigious institutes in India and abroad. Our Faculty members have worked against various odds of a budding institute to establish state-of-the-art research facilities. Through their dedicated service, our faculty members have achieved excellence in teaching and research, enabling the Institute to realize its aim of providing high quality education in modern sciences, integrated with research. Faculty members have been able to attract large quantum of extramural funding and have published their research in journals of international repute. Research papers from IISER Kolkata have appeared in prestigious journals, eg. *Nature Chemistry*, *Journal of American Chemical Society*, *Angewandte Chemie International Edition*, *Physical Review Letters*, *Journal of Virology*, *Frontiers in Microbiology*, *Environmental Science and Technology*, *Journal of Geophysical Research*, *Journal of European Mathematical Society*, *Advances in Mathematics*, *Statistics and Probability Letters*, to name a few. Faculty members of IISER Kolkata have been recipient of prestigious awards and recognitions eg. Shanti Swarup Bhatnagar Award, Swarna Jayanti Fellowship, Fellowship of the National Academies and Third World Academy of Sciences, J.C. Bose National Fellowship, IEEE Fellowship, National Geoscience Award and Young Scientist Award.

The Institute has 5 departments and 5 academic centres as mentioned below:

Academic Departments:



Biological Sciences



Chemical Sciences



Earth Sciences



Mathematics and Statistics



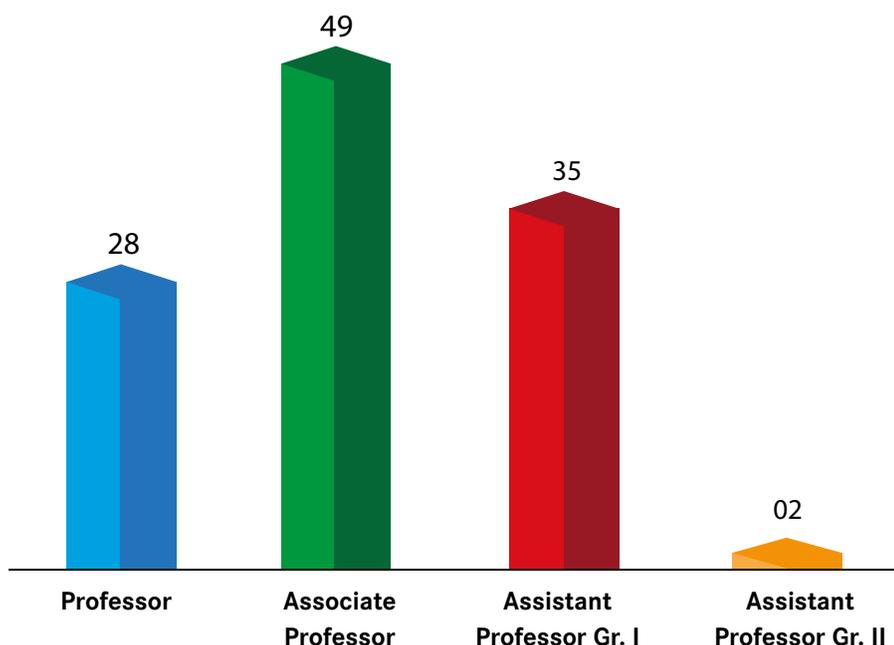
Physical Sciences

Academic Centres:

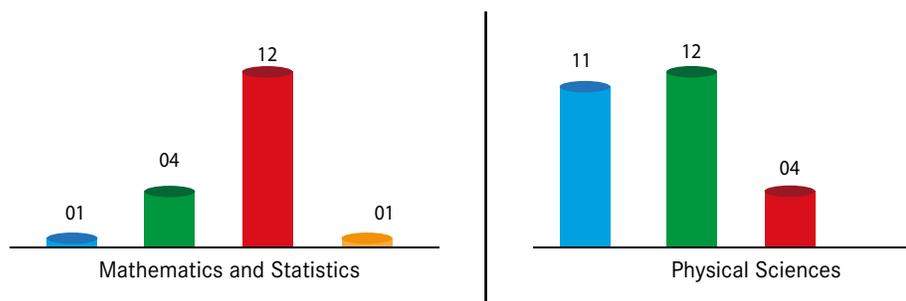
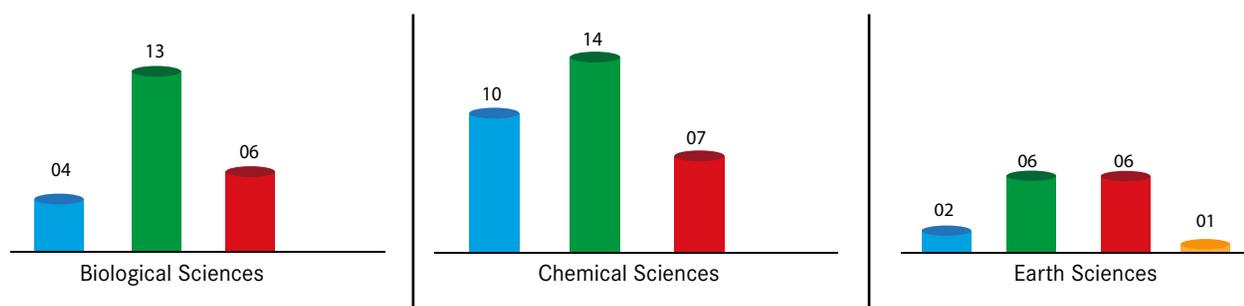
- Centre of Excellence in Space Sciences, India (CESSI)
- Centre for Advanced Functional Materials (CAFM)
- National Centre for High Pressure Studies (NCHPS)
- Centre for Climate and Environmental Studies (CCES)
- Center for Artificial Intelligence (CAI)

As on 31.03.2019, the Institute has 114 faculty members (28 Professors, 49 Associate Professors, 35 Assistant Professors Gr.I and 2 Assistant Professors Gr.II). The details of faculty members, department wise are given below:

Faculty On -Roll (As on 31.03.2019)



Faculty On -Roll Department Wise (As on 31.03.2019)



Awards, Honors and Distinctions

Like every year, members of the faculty of this institute have received numerous awards, honours and distinctions, both in national and international forum, in recognition of their excellence in their research and development work. The glorious moment in the history of this Institute was the selection of two faculty members from the Department of Chemical Sciences for the coveted Shanti Swarup Bhatnagar (SSB) Awards in the same discipline in the same year, which is generally regarded as the most prestigious scientific award in this country and award of SwarnaJayanti Fellowship to a faculty member from the Department of Biological Sciences. Those achievements are highlighted below:

Department of Biological Sciences (DBS)

Prof. Punyasloke Bhadury	<ul style="list-style-type: none"> Awarded prestigious SwarnaJayanti Fellowship Award (2017-18) in the discipline of Earth and Atmospheric Sciences. Invited to contribute to the United Nations World Ocean Assessment Report under the aegis of Oceans and Law of the Sea, United Nations.
Dr. Anindita Bhadra	<ul style="list-style-type: none"> Appointed as the Editor of the GYA annual magazine, Connections, to be published during the 10th anniversary of GYA next year.

Department of Chemical Sciences (DCS)

Prof. Swadhin Mandal	<ul style="list-style-type: none"> Awarded prestigious Shanti Swarup Bhatnagar Award of CSIR for 2018. Received SERB distinguished Investigator award. Invited to be a fellow of Royal Society of Chemistry. Nature India published a Comprehensive report on the research findings of Prof. Mandal. Invited to join the editorial advisory board of prestigious ACS journal <i>Inorganic Chemistry</i>.
Prof. Raja Shunmugam	<ul style="list-style-type: none"> The research work on development of a new kind of poly-plasticizer, named as, ADONORC made-up with highly water soluble polymer to increase the setting time of cement as well as flow rate is commercialized. Research work on "Multifunctional Nanocarrier with a Platinum Prodrug as an efficient dual-imaging, site-specific cancer theranostic agent" has been selected as Joint Runner-Up for the 78th National Awards for Technology Innovation.
Prof. Priyadarsi De	<ul style="list-style-type: none"> Received the "Kaushal Kishore Award, 2018" of the Society for Polymer Science (India).
Dr. Sayan Bhattacharyya	<ul style="list-style-type: none"> The research findings of Dr. Bhattacharyya and his students was published in <i>The Hindu</i> newspaper.
Dr. Soumyajit Roy	<ul style="list-style-type: none"> Invited as Associate Editor for the Journal <i>Frontiers in Chemistry</i>. Research work on 'soft-oxometalate based active matter for cleaning of waste water' has been highlighted in <i>The Hindu</i> newspaper.
Dr. Biplab Maji	<ul style="list-style-type: none"> Nominated as "Thieme Chemistry of Journal Awardees" by the Editorial Board of Synlett and Synfacts.
Dr. Rahul Banerjee	<ul style="list-style-type: none"> Awarded the prestigious Shanti Swarup Bhatnagar Award of CSIR for 2018. Received an industry project (from GAIL) titled "Bulk Synthesis and discovery of porous COF materials with remarkable chemical stability for Methane storage" with a sponsor value of Rs. 1.2 Cr. Research work of Dr. Banerjee has been published in newspaper.

Department of Earth Sciences (DES)

Prof. Supriyo Mitra	<ul style="list-style-type: none"> Selected as Regular Associate of The Abdus Salam International Centre for Theoretical Physics (ICTP) for a period of 5 years (2019-2024). Selected as a Visiting Professor at the Earthquake Research Institute, the University of Tokyo for a period of two months.
Prof. Prasanta Sanyal	<ul style="list-style-type: none"> Received an amount of Rs. 2.3 Crores for the project "Istotope enabled Organic Geochemistry"
Dr. Tarun K Dalai	<ul style="list-style-type: none"> Received the Mary Sears Visitor Award to visit the Woods Hole Oceanographic Institution as a guest investigator. Nominated as a member of the Research Advisory Council of the Birbal Sahni Institute of Paleosciences, Lucknow for three years.

Department of Mathematics and Statistics (DMS)

Dr. Koel Das	<ul style="list-style-type: none"> An article of Dr. Das appeared in “The Life of Science”, a science media platform that focuses on women scientists in India
Dr. Anirvan Chakraborty	<ul style="list-style-type: none"> Associate of the Indian Academy of Sciences, Bangalore for the period of 2018-2020.

Department of Physical Sciences (DPS)

Prof. Prasanta K Panigrahi	<ul style="list-style-type: none"> Invited as an expert reviewer of ‘Special Research Program (SRP)’ of the Austrian Science Fund, to be held in Vienna, Austria Featured amongst the “top ten scientific personality 2017” in “Scientific India”
Prof. Amit Ghosal	<ul style="list-style-type: none"> Awarded APS-IUSSTF Professorship in Physics. Received a sanction of a grant under the SPARC programme for research collaboration with foreign experts
Prof. Dibyendu Nandi	<ul style="list-style-type: none"> Awarded a Swedish Wenner-Gren Foundation Guest Professorship at the Nordic Institute of Theoretical Physics (NORDITA, Stockholm) Associated as a part of Aditya L1 Mission of ISRO. The research work of Prof. Nandi and his student on ‘Sunspot Cycle’ has been published in <i>Nature Communication</i> and is reported in several news papers. Conferred with the Laxminarayana & Nagalaxmi Modali Award 2018 of the Astronomical Society of India.

Activities:

Selection Committee Meetings for faculty members under Rolling Advertisement were conducted on the following mentioned dates:

Dept. of Mathematics and Statistics

Assistant Professor Gr. I and Associate Professor : Dated 22-05-2018

Dept. of Earth Sciences

Assistant Professor Gr. I and Associate Professor : Dated 08-06-2018

Dept. of Biological Sciences

Associate Professor : Dated 27-06-2018 & 28-03-2019

Professor : Dated 04-09-2018

Dept. of Chemical Sciences

Professor and Associate Professor : Dated 10-08-2018 & 11-08-2018

Assistant Professor Gr. I : Dated 16-03-2019

Dept. of Physical Sciences

Professor : Dated 14-09-2018.

Assistant Professor Gr. I : Dated 08-12-2018.

A Peer Review Committee constituted by the Ministry reviewed the performance of our Institute from the inception during 4 – 5 February 2019.

New Initiatives:

The Office of Dean, Faculty Affairs has initiated the recruitment process for two new departments of Computer Science and Humanities and Social Sciences.



Prime Minister Shri Narendra Modi Presents Swanti Swarnup Bhatnagar Prize to Dr. Rabul Banerjee



Prime Minister Shri Narendra Modi Presents Swanti Swarnup Bhatnagar Prize to Prof. Swadhin Mandal.



Prof. Punyasloke Bhadury has been awarded the prestigious SwarnaJayanti Fellowship Award (2017-18) in the discipline of Earth and Atmospheric Sciences.

Members of the office of Faculty Affairs

Prof. Narayan Banerjee

Professor, Physical Sciences
(from 24.09.2018)

Prof. Supriyo Mitra

Professor, Earth Sciences
(till 23.09.2018)

Mr. Suraj Narayan Bordoloi

Assistant Registrar

Mr. Puskar Das

Office Assistant (MS)

Mr. Joydeep Sengupta

Junior Assistant

Mr. Supriya Gupta

Junior Assistant





Academic Departments

Department of Biological Sciences



The Department of Biological Sciences (DBS) aims to combine teaching and research to motivate and engage actively with academics at the national and international levels. The faculty at DBS conduct research and teaching in a broad spectrum of areas in Biology that includes fields spanning from the molecular to the organismal levels. Our teaching is geared towards an integration of classroom lectures with hands-on laboratory exercises to teach students basics of biology along with the most recent advances in biological research. This is facilitated by state-of-the-art instruments and facilities such as confocal microscopy, flow cytometry, histopathology, tissue culture and facilities for housing and conducting research on various organisms.

Detailed below are the specific additions to our departments' repertoire of facilities, activities and achievements over the last one year (2018-2019).

Departmental Research and Teaching Facilities

A number of significant additions to the DBS departmental research facilities took place during the 2018-19 financial year. A major addition was the establishment of the Biomolecular Interactions Core Facility jointly funded by DST-FIST and IISER Kolkata. The Biomolecular Interactions facility has been equipped with state-of-the-art equipment for studying biomolecular interactions such as protein-protein, protein-nucleic acid, protein-small molecules, nucleic acid-small molecules etc. at both steady state and real time conditions. The equipment which have been procured and installed in the Biomolecular Interactions Core Facility include a Surface Plasmon Resonance system (Biacore T200), an Isothermal Titration Calorimeter (Microcal PEAQ-ITC from Malvern Pananalytical), a High-Performance Liquid Chromatography System (Waters Breeze 2) and a Stopped Flow spectrophotometer. These equipments have been housed in a separate temperature and humidity-controlled facility under UPS and filtered power supply for proper maintenance and operation.

Besides these specialized equipments, a number of new equipments and facilities have been added to the DBS common research facilities. These include a new cold room (4°C) for various low temperature biochemical applications, two warm rooms (37°C and 30°C) for culture growth and enzyme reactions, a French Press cell disruptor for lysing of prokaryotic and eukaryotic cells, a freeze dryer (lyophilizer) and a table-top ultracentrifuge (Beckman Coulter). The first ultra long read sequencer (Oxford Nanopore) has also been installed in DBS, opening up new possibilities for applications in genomic and transcriptomic studies. A large display attached microscope has been installed for both teaching and research applications.

Various others attachments for the upgradation of existing equipments such as microscopes, real time PCR systems etc. have also been installed.

Outreach Activities of the Department

The DBS Outreach Program aims to serve as a bridge between our department and local people and institutions of the region. It aims to do so by organizing activities for sharing academic excellence with fellow neighboring academic institutions across the country through various outreach education program. We hosted students and faculty from several universities from nearby and far. Here are a list of some of these outreach programs.

1. Department of Biological Sciences Outreach team participated in “SUNDARBAN KRISTI MELA O LOKO SANSKRITI UTSAB 2018” during 20-29 December 2018 to connect with the people from this region. Our team secured 3rd Position among the many participating Govt. organizations. The team was led by Dr. Partho Sarathi Ray and Dr. Amirul Islam Mallick.
2. DBS also represented IISER Kolkata at two National level Science Exhibitions cum Fair in Patuli (July 26-29, 2018, organized by Bengal Human Resource Development Foundation; BGRDF) and Nimta (August 3 - 6, 2018, organized by the Central Calcutta Science and Culture Organization for Youth, Kolkata; CCSCYO). It was a huge success as we experienced full house throughout the 4-days of exhibition. The team was led by Dr. Arnab Gupta, Dr. Amirul Islam Mallick and students of DBS.
3. Post graduate students and research scholars (Endocrinology & Reproductive Physiology special) of Serampore College visited DBS research laboratories between March 27 to 29, 2019. They visited several faculty laboratories to gain knowledge about ongoing research in the department. They specifically spent time visiting the Central Imaging, Microscopy facilities, etc.
4. Lab visit by Odisha University of Agriculture and Technology (OUAT) was organized on 18th March, 2019, when students from the University visited our institute and spent the day meeting and interacting with many of our faculty members, visited the labs and talked to our research scholars
5. A similar visit from Lab visit by Kumaun University (Nainital) on 4th April, 2019 took place where postdocs, PhD and Masters students from the University visited our department to meet and spend time with our students and faculty, to understand the various research activities being carried out within our department.



6. As part of the national level conference organised by some of the faculty of DBS, "Understanding Behaviour 2019" in January 2019 at IISER Kolkata, a workshop on animal behaviour as an outreach event during the Understanding Behaviour conference 2019, on 12th January 2019. This event was attended by approximately 250 students of classes VI - VIII of Garden High School, Oriental Public School, Springdale High School and Kanchrapara English Medium School. The students learnt to observe animals and carried out some hands-on experiments. They also participated in a "Draw a scientist contest" funded by the Global Young Academy
7. Dr. Anindita Bhadra was part of several outreach activities in neighbouring regions in W Bengal. Santipur Marami, an NGO in Santipur, invited us to their annual outreach event on 25th July 2018, where I represented IISER Kolkata and gave a talk on "The origin and evolution of life and other questions". This talk was delivered in Bangla. This event was attended by about 300 local high school students. In August Dr. Bhadra also delivered a lecture on Darwinism and human evolution at a public outreach event at Mecheda, Midnapore, by the Breakthrough Science Society. This event was attended by members of the society and several members of the public, including college students.
8. Dr. Anindita Bhadra conducted a "Remote area lecture" sponsored by INSA on behalf on INYAS and co-sponsored by IISER Kolkata DBS outreach committee at the Debagram High School, Debagram, Nadia, titled "perspectives in modern biology" on 9th October 2018. Dr. Moulinath Acharya of NIBMG, who is also a member of INYAS and I delivered two lectures at this event. His talk was on genomics and modern medicine and mine was on Darwinism. Both lectures were delivered in Bangla. This event was attended by about 150 students at the high school level.

Student Achievements

Our BS-MS students participated in the prestigious iGEM 2018 competition. The team included several Biology Major students from various years along with students from other departments from our Institute. These students made us all proud by bring back a Gold Medal at iGEM Giant Jamboree in October 2018.

A large number of our PhD students presented their work in national and international conferences. Many of them have also obtained travel grants to attend international conferences.

- **Snigdha Mukhopadhyay** - International travel grant from British Ecological Society for presenting her PhD work in an Annual meeting at Birmingham, UK. December 2018, Amount 1000 GBP
- **Bishwarup Paul** - International travel grant from IISER Kolkata to present his PhD work in the 9th European Conference on Behavioural Biology at Liverpool, UK. August 2018, Amount - Rs 100,000.00.
- **Snigdha Mukhopadhyay** - Selected to attend 2nd SERB school for Chemical Biology held at IISc, Bangalore, India.
- **Kushankur Bhattacharyya** - Selected to attend Cornell Lab of Ornithology Bioacoustics programme held at IISER Tirupati, India during March 2019.
- **Rubina Mondal** - Poster presentation selected for SFECOLOGIE 2018 - International Conference on Ecological Sciences at Rennes, France held in October 2018.
- **Aditya Ghoshal** - Poster presentation selected for British Ecological Society Annual Meeting at Birmingham, UK held in December 2018.
- **Sudipta Bar's** interview has been published in the journal Disease Models and Mechanisms
- **Shubhasish Sinha** was awarded the 2018 Bioenergy-Awards for Cutting Edge Research (B-ACER) Internship Program, DBT-IUSSTF for an opportunity work with Prof. Danielle Tullman-Ercek, Center for Synthetic Biology, Northwestern University, Evanston, IL, USA. He successfully completed all expenses paid six-month research internship funded by Department of Biotechnology (Government of India)
- **Praveen Nath** (CSIR-JRF and 3rd year Int-PhD) was selected for the B4 Synthetic Biology Workshop organized by the Lakshmi Mittal South Asia Institute, Harvard University (LMSAI), Cambridge, Institute of Bioinformatics and Applied Biotechnology (IBAB), Bengaluru and Indian Institute of Science Education and Research (IISER), Pune under the B4 program funded by Department of Biotechnology (Government of India). This program started on the 20th of February, and 25 students were selected by LMSAI from a large group of applicants.

- **Sushant K. Sinha** (CSIR-SRF and 5th-year Int-PhD) Secured the 1st position in Oral presentation and received the Young Scientist in Bioprocessing Award at the Bioprocessing India-2018, 16 – 18 December 2018, organized by IIT Delhi.
- **Ms. Sritama Aich** (SRF) was selected for Oral presentation at Bioprocessing India-2018, 16 – 18 December 2018, organized by IIT Delhi to present her work.
- Awarded Travel grant to Ms. Ankita Singh for attending and oral presentation of her research on Mucosal immunization with hcp of type VI secretion system confers strong host immunity and efficiently reduce cecal colonization of *Campylobacter jejuni* in chickens 12th Vaccine Congress, Budapest, Hungary, 16-19th August, 2018 (Oral presentation).
- **Ms. Kasturee Chakraborty** received best poster award at “25th ISCB International Conference (ISCBC-2019)” on “Trends in Chemical and Biological Sciences: Impact on Health and Environment” on 12th - 14th January, 2019 at Lucknow, India; best poster award at “Frontiers in Modern Biology (FIMB) 2018” symposium on 19th -21st January, 2018 at Department of Biological Sciences, IISER Kolkata.
- **Dr. Sanchita Mukherjee**, DST-NPDF postdoctoral fellow in our lab has recently joined as ACS Outreach editor.
- **Dr. Sanchita Mukherjee** Delivered “Young Researcher Talks” on ‘Computational approach to engineer rationally designed nanostructured molecular transporters for siRNA delivery’ at Annual Symposium of the Indian Biophysical Society Meet, Indian Institute of Science Education and Research Mohali, Chandigarh, 22nd - 25th March, 2017
- **Mr. Snehasish Ghosh** presented poster in 10th International Peptide Symposium (10th IPS) during December 3 to 7, 2018 in Kyoto, Japan.
- **Dr. Mahua Maulik** received Wellcome Trust-DBT India Alliance Early Career fellowship (2018).
- **Mr. Abhishek Bose** Got selected for the oral presentation (Dr. D. M. Kar Prize) at International Conference on Neuroscience & XXXVI Annual Conference of Indian Academy of Neurosciences 2018, 29th to 31st October, B.H.U.
- **Debanjana Chakravarty** received 3rd best poster award 6th February 2019, DBS Departmental day.
- **Mr. Soumya Kundu** received best poster award at 43rd Indian Biophysical Society Meeting 2019, from 15-17th March 2019 at IISER Kolkata

Awards and Honors:

- **Dr. Anindita Bhadra** selected as an Executive Committee Member from Global Young Academy (2019)
- **Dr. Robert John Chandran** has been an Awardee of Eminent Foreign Professors Program, Hainan University Hainan University, P. R. China (July 2018 - July 2019).
- **Dr. Robert John Chandran** Appointed as Research Advisor, Nan Yang Academy of Sciences, Singapore. Starting October 17, 2018.
- **Prof. Jayasri Das Sarma** has been host for ASM-IUSSTF Indo-US Professorship Award (2018) of Professor Sharon Gusky from North Western Connecticut Community College , CT, USA ; elected Fellow of West Bengal Academy of Science and Technology (WAST) 2018
- **Dr. Neelanjana Sengupta** has been selected as a member of the Executive Council of the Indian Biophysical Society 2019.
- **Dr. Malancha Ta** selected for Travel fellowship for an EMBO workshop in Singapore in Nov., 2018.

List of Faculty Members:

Professor

Annagiri, Sumana	(from 09-10-2018)
Bhadury, Punyasloke	(from 09-10-2018)
Das Sarma, Jayasri	
Sengupta, Tapas Kumar	(from 09-10-2018)

Associate Professor

Bhadra, Anindita	(from 29-03-2019)
Bhat, Anuradha	(from 25-09-2018)
Chandran, Robert John	(from 24-09-2018)
Datta, Partha Pratim	(from 25-09-2018)
Datta, Rupak	
Datta, Supratim	
Maiti, Sankar	(from 25-09-2018)
Mallick, Amirul Islam	(from 29-03-2019)
Prasad, Mohit	
Ray, Partho Sarothi	(from 25-09-2018)
Sinha, Bidisha	(from 25-09-2018)
Sinha Roy, Rituparna	(from 24-09-2018)
Ta, Malancha	(from 25-09-2018)

Assistant Professor Grade – I

Das, Dipjyoti	(from 01-01-2019)
Das, Rahul	
Gangappa, Sreeramaiah	(from 17-09-2018)
Gupta, Arnab	
Sengupta, Neelanjana	
Sudhamalla, Babu	(from 26-07-2018)



Department of Chemical Sciences



Research and Teaching

The Indian Institute of Science Education and Research - Kolkata was founded in 2006 by the Ministry of Human Resource Development (MHRD), Government of India and one of the first departments to be established was the Department of Chemical Sciences (DCS). From the beginning, the Department has incarnated the Institute's mission of excellence in both research and teaching. The DCS has appreciable strength in the core areas of physical, organic, inorganic, theoretical chemistry as well as in interdisciplinary research areas at the boundaries with physics, biology, earth science and materials science. An extremely wide range of state-of-the-art instrumentation as well as various central facilities are available in different research groups to carry out the research activity of DCS research groups.

The Department of Chemical Sciences course curriculum is accredited by The Royal Society of Chemistry (RSC). The Department is engaged in undertaking research activities in frontier areas of Chemical Sciences which includes Chemical Biology, Chemistry of Macromolecules, Functional Nanomaterials, Inorganic and organic Materials Chemistry, Inorganic and Organometallic Catalysis, Bioinorganic Chemistry, Spectroscopy and Microscopy, Synthetic Organic and Supramolecular Chemistry, Polymer Chemistry, Theoretical and Computational Chemistry, Computational Catalysis.

Research Highlights

Professor Subhajit Bandopadhyay

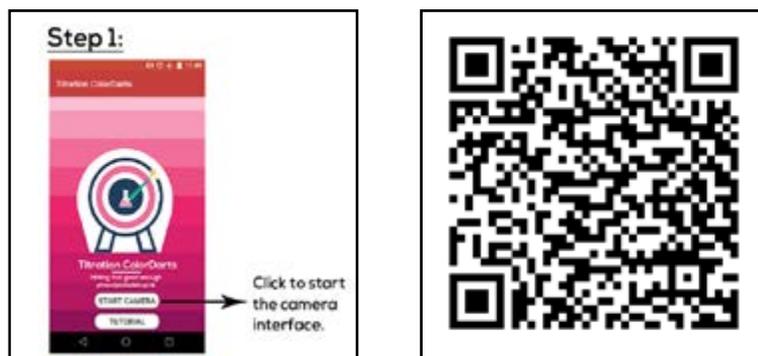
Development of an educational tool for high schools and college chemistry: As a part of the reaching out to the students of our country, we have already developed a smartphone based app for Chemical Education that can be implemented across the country. The app acts as a tutor for hands on chemistry experiments of titrations. Students often have trouble while performing experiments in terms of understanding whether the pink shade of the solution in a phenolphthalein based titration is good enough. Therefore, the question "Is it pink enough" has become almost a proverbial questions for the teachers throughout the world. To address this persisting problem, this smartphone tutor application called Titration ColorDarts (TCD) has been developed and implemented. TCD uses the camera function of the smartphone to quantify the captured pink color of a titration solution, presenting it as a gamified score on a dartboard and providing a feedback report on potential error sources for scaffolding students' reasoning through question prompts and hints. An exploratory pilot study conducted with undergraduate chemistry students indicated that TCD is useful in helping students attain the learning goals and detecting potential experimental errors to be minimized. As a smartphone tool that can easily be accessed and installed, TCD has the potential to be an effective

method of helping students who are performing phenolphthalein-based titration experiments independently with minimal support from the instructor. This work has already been lauded by the American Chemical Society through their Tweets.

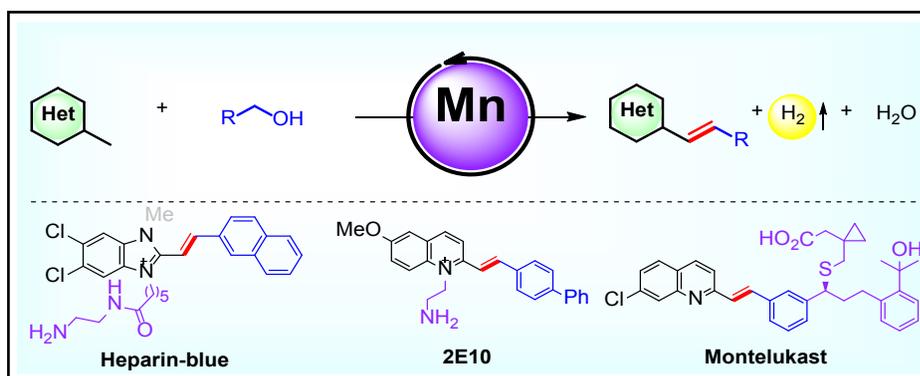
For large scale implementation, Titration ColorDarts' has been released as a free application on the Google Play Store for Android platform smartphones (Version 4.0 and upwards).

Application URL: <https://play.google.com/store/apps/details?id=com.lightlab.tcd.titrationcolordarts>

QR code: Scan with a smartphone camera to access the TCD application through the Google Play Store.



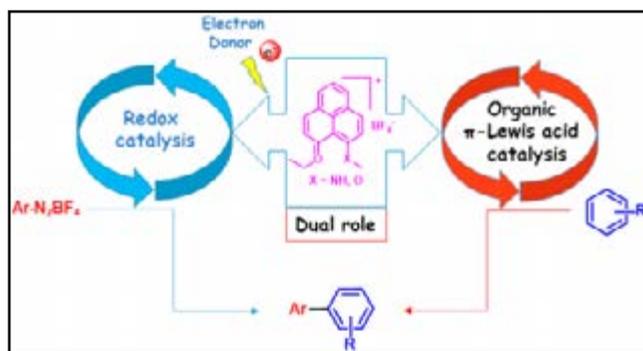
This initiative has been funded by the MHRD through a SAP grant ICSR/SAP/2018/SN-1.



Dr. Biplab Maji

Direct Olefination of Methylheteroarenes with Primary Alcohols: The dehydrogenative coupling of alcohol and methylheteroarenes produced (*E*)-disubstituted alkenes. The reaction is highly sustainable; catalyzed by an Earth's abundant metal manganese and water and hydrogen (gas) were evolved as sole byproducts.

Recently, the researcher from the laboratory of Dr. Biplab Maji has published this work in *Angewandte Chemie*.



Professor Swadhin Mandal

1. Integrating Organic Lewis Acid and Redox Catalysis: The Phenalenyl Cation in Dual Role.

J. Am. Chem. Soc. **2018**, *140*, 8330-8339.

2. Organized International Conference on Organometallics and Catalysis. (13th-16th December, 2018), Goa, India.

Professor Debasish Haldar

Commercially supply of product developed in IISER Kolkata

“POSS appended diphenylalanine” to Vikram Sarabhai Space Centre, ISRO, Thiruvananthapuram

Patent application No. **R20183030651** for **“COMPOSITIONS AND METHODS FOR PURIFICATION OF WATER”**

Facilities Created

Professor Swadhin Mandal

Solvent Purification Systems.

Dr. Pradip Kumar Tarfadar



Fluorescence spectrometer from SERB-ECRA project

Professor Debasish Haldar

Fluorescence spectrometer

Recognition

Professor Priyadarsi De

- Associate editor of Journal of Macromolecular Science, Part A: Pure and Applied Chemistry, Taylor & Francis Group, March, 2019 to Present
- 11th Foundation Polymer Award of the Prof. Sukumer Maiti Polymer Award Foundation, India for the year 2018.
- Kaushal Kishore Memorial Award of the Society of Polymer Science, India (SPSI) for the year 2018.
- Outstanding Reviewers for RSC Advances in 2017, Published by Royal Society of Chemistry, Impact Factor: 2.93.

Professor Swadhin Mandal

- *Shanti Swarup Bhatnagar Prize in Chemical Sciences for 2018.*
- Royal Society of Chemistry, UK has identified Dr. Swadhin Mandal as an outstanding individual in chemical science and has invited to become a **Fellow of Royal Society of Chemistry (FRSC)** under the **“Leaders in the Field”** category.
- SERB Distinguished Investigator Award.
- CRSI bronze medal

Professor Rahul Banerjee

- *Shanti Swarup Bhatnagar Prize in Chemical Sciences for 2018.*

Professor Debashish Haldar

- Editorial Board Member, *Current Organic Synthesis*, Bentham Publication, March 2019

List of Seminars

Date of the seminar	Name of the Speaker	Affiliation	Title of the Talk
02.04.18	Prof Prof. Vladimir I. Bregadze	Russian Academy of Sciences	Carboranes: History of Discovery, Main Results, Recent Advances and Application
02.04.18	Prof. Igor Sivaev	Russian Academy of Sciences,	Boron-Containing Liposomes For Boron-Neutron Capture Therapy (BNCT)
03.04.18	Prof Patrick Y S Lam	Barach S. Blumberg Institute	Discovery of Eliquis®. Apixaban, a Novel Factor Xa Anticoagulant and Chan-Lam Coupling Reaction
09.04.18	Prof Soumabha Bag	Karlsruhe Institute of Technology, Germany	Investigating the Structure and Chemical Reactivity of Metastable Solids
04.05.18	Prof Saumitra Sengupta	Former Professor at Jadavapur University	Cysteine modification with arenediazonium salts
23.05.18	Dr. Premashis Manna	University of Colorado at Boulder	Tuning the Photophysics of Red Fluorescent Proteins
25.05.18	Dr. Garima Jindal	University of Southern California, Los Angeles)	Exploring the Challenges of Computational Enzyme Design
06.06.18	Dr. Susmita Roy	Rice University, Houston, TX, USA	Development of an RNA electrostatic model to understand riboswitch function
04.07.18	Dr. Soumen K Samanta	University of Maryland, College Park, USA	Supramolecular Self-Assembly: From Molecular Machine to Biomedical Application
18.07.18	Prof. Ayusman Sen	The Pennsylvania State University	Fantastic Voyage: Designing Self-Powered Nanobots
08.08.18	Prof. Achintya Kumar Dutta	Indian Institute of Technology Bombay	Local Correlation Methods for Excited States
13.08.18	Dr. Subhas Chandra Pan	Indian Institute of Technology Guwahati	Organocatalytic Asymmetric Cyclization Reactions
16.08.18	Dr. Subrata Kundu	University of Goettingen, Germany	Stabilization of Highly Reactive Group 13-15 Species by Cyclic Alkyl(amino) Carbenes
28.08.18	Professor Swaminathan Sivaram	INSA Senior Scientist, IISER Pune and Honorary Professor, IISER Kolkata	Sustainable chemistry: Challenges and implications to research
29.08.19	Professor Swaminathan Sivaram	INSA Senior Scientist, IISER Pune and Honorary Professor, IISER Kolkata	Evolution of science, technology and public policy: Past, present and future
29.08.19	Dr. Seenivasan Hariharan	Texas Tech University, USA	Direct dynamics simulations of O ₂ -graphene interactions at high temperatures
01.09.18	Prof. Asit K. Chakraborti	NIPER Mohali	Exploring New Chemistries in the Quest of New Therapeutic Agents
12.09.19	Dr. Tatini Rakshit	Centre for Nanotechnology, IIT Guwahati	Applications of Scanning Probe Methods in Biology at the Nanoscale
03.10.18	Dr. Dimpay Kalia	IISER Bhopal	Maleimides-Versatile scaffolds for chemical biology
10.10.18	Dr. Ujjal Das	Institute of Inorganic Chemistry, University of Bonn, Germany	Beyond Silicates and Ceramics: Modern Organosilicon Chemistry in Low Oxidation States
11.10.18	Dr. Apparao Draksharapu	University of Minnesota, USA	Shedding light on bioinspired inorganic complexes: A multi-technique approach
23.10.18	Prof. Sumit Bhaduri	Adjunct Professor, IISER Kolkata	The language of chemistry and chemical technology: the relationships between “know why”, “know how” and the “central science”
25.10.18	Prof. Sumit Bhaduri	Adjunct Professor, IISER Kolkata	The language of Science and technology through the eyes of a chemist.
26.10.18	Prof. Sumit Bhaduri	Adjunct Professor, IISER Kolkata	“Organometallic and Catalysis”
12.11.18	Dr. Abhishek Dutta Chowdhury	Advanced Catalytic Materials, KAUST Catalysis Centre	Interrogating Reaction Mechanisms for the Pursuit of New Chemical Technology

Date of the seminar	Name of the Speaker	Affiliation	Title of the Talk
14.11.18	Dr. Sayan Bagchi	National Chemical Laboratory, Pune	Spectroscopic evidences on the role of non-covalent interactions and ultrafast dynamics toward molecular functions
15.11.18	Dr. Srabanti Chaudhury	IISER Pune	Quantifying fluctuations in single-molecule enzyme kinetics
15.11.18	Dr. Mantu Santra	Stony Brook University, USA	Mathematical modeling of bacterial proteostasis and protein damage
26.11.18	Professor Anindya Datta	IIT Bombay	Quest for emissive organic solids and aggregates
30.11.18	Dr. Snehangshu Patra	Indian Institute of Engineering Science and Technology (IIST)-Shibpur	Artificial photosynthetic device from scratch
4.12.18	Dr. Sudip Chakraborty	Department of Physics & Astronomy, Uppsala University, Sweden	Development and Application of Cutting-Edge Materials Modelling for Energy Scavenging
10.12.18	Prof. Oren Scherman	University of Cambridge	Functional materials: Exploiting dynamic self-assembly at interfaces
18.12.18	Prof. Aiwen Lei	Wuhan University	Oxidation-Induced C-H Functionalization and Updating Oxidative Cross-Coupling
28.01.19	Dr Amlan Pal	University of St Andrews, St Andrews, Fife KY16 9ST, United Kingdom	Applications of Light Harvesting Transition Metal Polypyridyl Complexes from Catalysis to Interconversion of Energy
14.02.19	Prof. Kamaljit Singh	Department of Chemistry, UGC Centre of Advance Study-II, Guru Nanak Dev University, Amritsar	Materials with tailorable and switchable charge transport and nonlinear optical behaviour
27.02.19	Dr. Jean-Marc Latour	University of Grenoble Alpes	Fe-catalyzed nitrene transfer: a rational approach combining experiments and DFT calculations
05.03.19	Prof. Herbert W. Roesky	University of Goettingen, Germany	Organometallic Hydroxides
06.03.19	Prof. Herbert W. Roesky	University of Goettingen, Germany	Silicon Fluorides and Their Congeners
05.03.19	Dr. Basudeb Maji	Harvard Medical School	Synthetic activators and inhibitors of CRISPR-Cas9 based genome engineering
06.03.19	Dr. Anukul Jana	Tata Institute of Fundamental Research Hyderabad	Convenient Access to Pyrrolinium Cations: A Synthon for Carbon Based Radicals
08.03.19	Prof K. George Thomas	Indian Institute of Science Education and Research Thiruvananthapuram	Excitons and plasmons: A tale of two elementary excitations and their interaction
08.03.19	Prof Kavirayani R. Prasad	Department of Organic Chemistry Indian Institute of Science, Bangalore	An Unexpected de tour into the Synthesis of Simple Alkaloids from Polyols and Macrolactones
08.03.19	Prof. Herbert W. Roesky	University of Goettingen, Germany	Materials of Low Valent Silicon and Low Valent Metals
08.03.19	Dr. K.Geetharani	Department of Inorganic and Physical Chemistry Indian Institute of Science, Bangalore	Base Metal Catalyzed Borylation of Aryl Halides and Alkenes K.Geetharani
15.03.19	Prof. Sheshanath V. Bhosale	Department of Chemistry, Goa University	Supramolecular Chemistry: Functional Structures on the Nanoscale
14.03.19	Dr. Kelath Murali Manoj	Satyamjayatu: The Science & Ethics Foundation	"Why is oxygen the elixir of life? How does cyanide kill so quickly?"
06.02.19	Dr. Tapas Sahoo	University of .Waterloo, Canada	Estimation of Ground State Entanglement Entropy for Continuous Rotational Degrees of Freedom: a Path Integral Replica Trick Approach
22.01.19	Dr. Arobendo Mondal	Technical University of Munich, Germany	First-principles computations of NMR shifts for extended paramagnetic solids: significant effects beyond the contact shifts

Date of the seminar	Name of the Speaker	Affiliation	Title of the Talk
10.01.19	Prof. Samuel De Visser	University of Manchester	Nonheme iron hydroxylases and halogenases: How does the protein influence the product distributions?
26.12.18	Dr. Diptesh Dey	Technical University of Denmark, Lyngby	Dynamics Stark Control of HOD Vibrational Dynamics and Photodissociation
04.12.18	Dr. Swastika Banerjee	Lawrence Berkeley National Laboratory	Design Principles for Oxysulfide class of Lithium Superionic conductor
18.07.18	Prof. Biman Bagchi	IISc Bangalore	"Structure, Dynamics and Free Energy Landscape of Insulin Oligomers and Dissociation Pathway"
16.05.18	Dr. Manohar Badiger	Senior Scientist at Polymer Science and Engineering Division, NCL Pune	New Hydrophobically Associating Polymers and Gels: Synthesis, Rheology and Applications

List of Faculty Members:

Professor and Director

Pal, Sourav

Professor

Bandyopadhyay, Subhajit (from 09-10-2018)
 De, Priyadarsi (from 09-10-2018)
 Halder, Debasish (from 09-10-2018)
 Mandal, Swadhin Kumar (from 09-10-2018)
 Mukherjee, Arindam (from 09-10-2018)
 Mukhopadhyay, Balaram (from 09-10-2018)
 Purkayastha, Pradipta (from 09-10-2018)
 Reddy, Chilla Malla (from 09-10-2018)
 Shunmugam, Raja (from 09-10-2018)

Associate Professor

Banerjee, Rahul
 Bhattacharyya, Sayan
 Chaudhuri, Debansu (from 24-08-2018)
 Das, Mousumi (from 24-08-2018)
 Ghorai, Pradip Kumar
 Khanra, Sumit
 Koley, Debasish
 Mahalingam, Venkataraman
 Mandal, Prasun Kumar
 Roy, Amlan Kusum
 Roy, Soumyajit
 Sen Gupta, Sayam
 Tiwari, Ashwani Kumar
 Zade, Sanjio Shankarrao

Assistant Professor Grade – I

Banerjee, Supratim
 Das, Dibyendu
 Maji, Biplab
 Sarkar, Suman De
 Sureshkumar, Devrajulu
 Tarafdar, Pradip Kumar
 Vijayaraghavan, Ratheesh K.



Department of Earth Sciences



Departmental Activities

Indian Institute of Science Education & Research, Kolkata is the first among five IISERs, to have established a Department of Earth Sciences. The department started its journey in 2007, a year after IISER Kolkata was established. At present, the department has fifteen regular faculty members: two professors, six associate professors, and seven assistant professors. Additionally, the Department has one visiting professor and one DST-INSPIRE faculty. The department has 94 BS-MS students, 14 IPh.D students, 37 Ph.D. students, 3 Post-Doctoral Fellows. The faculty members of DES coordinate their research via three multidisciplinary Research Units:

- **Solid Earth**

Members of this research group study the crust and upper mantle structure of the Earth, its relation to tectonic deformation, and structural and kinematic evolution of mountain belts at different scales. Tectonic evolution of the continental crust through geological time is studied by integrating and correlating field, structural, petrological, geochemical, and geochronological data. The timing of juvenile crustal addition and crustal reworking events in the Archaean cratons, their linkage with supercontinent cycle, and secular change in the mechanism of continental crust formation and crust-mantle interaction are also investigated. Complementing datasets are analyzed to understand earthquake faulting, seismic velocity structure (isotropic and anisotropic cases), crust and upper mantle attenuation characteristics, convergence-related multi-scale strain partitioning in fold-and-thrust belts (with a focus on the Himalaya) and examine how lateral variation in structural architecture controls kinematic evolution of orogenic belts. Thermodynamic and elastic properties of Earth Materials under extreme pressure and temperature conditions using quantum mechanical first principles simulations are also studied.

- **Environment and Climate**

This group strives to provide a better and integrated understanding of biogeochemical and anthropogenic processes influencing modern environmental systems and climate. It aims to address a range of issues related to the contamination of environmental spheres, the consequent effects on biota, and potential remediation approaches. Research in this area focuses on studies of heavy metal transport from rivers and estuaries to oceans, human exposure to pesticides and sustainable use, fate and transport of nanoparticles in the environment, and its application for heavy metal remediation. The group also investigates regional climate change in terms of

perturbations to the atmospheric system and resultant feedbacks, with a special focus on the effects of aerosols, trace gases and other factors on climate forcing and the Indian summer monsoon. Researchers of this group use an array of observational, experimental and modelling approaches to investigate processes ranging from nano to macro/synoptic scales. The diversity of research interests within this group reflects the interdisciplinary character of the field of Environmental Sciences.

• Earth Surface Processes

The primary focus of this group is to investigate processes operating in the near-surface environment. Such processes encompass the interaction between the lithosphere, biosphere, hydrosphere, and atmosphere during Recent and deep time. The members of this group try to understand and reconstruct the processes such as weathering and erosion, sediment deposition, ocean circulation, climatic and tectonic perturbation by combining field and lab-based observations, geochemical and geochronological tools. The group also evaluates the effect of the above processes on the ecology and evolution of marine and terrestrial fauna and ocean composition using a combination of experimental, neontological and paleontological approach.

Research Highlights

- The research group led by **Prof. Prasanta Sanyal** has developed ISOSCAPE model for water isotopes. The ISOSCAPE model predicts the isotopic composition of water in a river basin considering the processes that affect the isotopic fractionation in a Geographic Information System. For the first time, using the ISOSCAPE, spatial variations in water isotopes are used to understand the hydrological processes operating in a large river basin like the Ganga basin. The study suggests that although in the upper stretch of the river, Ganga glacier melt contribution is important, in the middle and lower stretch climate, especially rainfall, plays an important role. Additionally, in the middle stretch, groundwater makes a significantly higher contribution compared to the lower and upper stretch. This study provides a platform to understand the factors which will regulate the future flow of our national river Ganga. This work has been published in the April 2019 issue of the *Journal of Hydrology* (<https://doi.org/10.1016/j.jhydrol.2019.01.044>).
- The Structural Geology research group led by **Dr. Kathakali Bhattacharyya** has established lateral variations in location and height of footwall Main Himalayan Thrust (MHT) ramp, initial width of the Lesser Himalayan basin, and presence of a lateral ramp to have resulted in the structural variation in Sikkim Himalayan fold-and-thrust belt (FTB). This work is published in the May 2018 issue of *Journal of Structural Geology*. They have also characterized the evolution of fractures from the Buxa dolomite of the Main Boundary thrust (MBT) sheet in the far-eastern Arunachal Himalayan FTB. The early formed low- and moderate-angle fractures are interpreted to be pre-folding layer-parallel shortening structures, while the dominant late-stage high-angle fractures are inferred to have formed synchronous to folding, tracking the progressive deformation of the orogenic wedge. Cumulative plots of fracture spacing values collected from outcrops and under the microscope reveal that this parameter is best described by power-law distributions that indicate scale-independence of fracture spacing. However, the coefficients of variation (C_v) of spacing of these high-angle fractures reflect scale-dependent clustering. This work is published in March 2019 issue of *Journal of Structural Geology*.
- The Atmospheric Chemistry and Climate Change Group led by **Dr. Sayantan Sarkar** has established the first long-term record of fine aerosol load and its potential sources over megacity Kolkata. Using a dataset of aerosol optical depth (AOD) spanning 2001-2017 from MODIS onboard the TERRA satellite, it was shown that aerosol loads over Kolkata have increased consistently and significantly over the past 17 years. Coupling these results with chemically speciated AOD from the MERRA-2 reanalysis system and clustered air mass backward trajectories, it was shown that this rise in AOD is predominantly driven by aerosol sulfate sourced from thermal power plant clusters in states such as Jharkhand, Chhattisgarh, and Odisha, and from residential biofuel use in the central and eastern Indo-Gangetic Plain (IGP) and the Ganges-Brahmaputra Basin. Long-range transported carbonaceous aerosol from the central and northwestern IGP, especially during post-harvest agricultural residue burning during the post-monsoon, was also found to contribute substantially to aerosol levels over Kolkata. Overall, this study identified for the first time that a considerable fraction of fine mode aerosol over Kolkata is non-local and is atmospherically transported, thereby reinforcing the need to have an integrated air quality management policy for the IGP as a whole. This work has been published in the July 2019 issue of *Atmospheric Environment* (<https://doi.org/10.1016/j.atmosenv.2019.04.031>).
- The Atmospheric Chemistry and Climate Change Group led by **Dr. Sayantan Sarkar** also published the first comprehensive review of black carbon (BC) aerosol in India. Covering more than 140 studies spanning 2002-2018, this review summarized BC levels under baseline conditions across various land-use categories in India, identified several anomalous environmental and emission conditions leading to high BC, and critically evaluated existing efforts at characterizing BC climate forcing in this region. The study put forward several recommendations in

terms of enhancing BC measurement network coverage, the need for targeted efforts to understand BC aerosol mixing and quantitative source apportionment, and prospects for coupled chemical-optical characterization of light-absorbing organic aerosol. This work has been published in the April 2019 issue of *Atmospheric Research* (<https://doi.org/10.1016/j.atmosres.2018.12.002>). Since its publication, this article has consistently featured as one of the most downloaded Atmospheric Research articles.

- The Environmental nanoscience group led by **Dr. Gopala Krishna Darbha** were successful to develop a clay supported amorphous aluminum nanocomposite that can be applied for the removal of Cr(VI) from aqueous solutions. The nanocomposite shows a very fast removal of the contaminant (>90% within 5 minutes) with very high removal efficiency (49.5 mg/g) of the synthesized material (<https://doi.org/10.1039/c9ra00742c>). Also, a pure phase rutile was synthesized and its degradation ability for malachite green oxalate (MG), a hazardous dye, was also checked and found to be 97.54% in 3 hours being comparable to commercial TiO₂ when irradiated with a definite dose of ultraviolet (UV) radiation (<https://doi.org/10.1016/j.matchemphys.2019.01.049>). In addition to the applied research, the fundamental work has been done to understand the surface chemistry of Sapphire-C and found that atomically smooth surfaces exhibit lower IEPs, while rougher surfaces (roughness on the order of nanometers) result in higher IEPs compared to reference samples (<https://doi.org/10.1016/j.cis.2017.12.004>).

Seminars and Symposiums

Seminars

The Department organized 7 seminars, where speakers from reputed institutes/centres in India/abroad delivered talks. The list of speakers includes Dr. Sumit Mukhopadhyay (Berkeley National Laboratory, Berkley, USA); Dr. Prosenjit Ghosh (Indian Institute of Science, Bangalore); Dr. Chinmay Mallik (Max Planck Institute for Chemistry, Mainz, Germany); Dr. Jih-Pai Lin (Department of Geosciences, National Taiwan University, Taiwan); Dr. Saptarshi Dey (IIT Gandhinagar); Dr. Nirupam Karmakar (Department of Earth, Ocean and Atmospheric Science, Florida State University, USA), to name a few.

Invited Lectures

- An invited lecture on “*The estuarine cycling of metals and isotopes: the regional and global perspective*” was delivered by **Dr. Tarun K. Dalai** at the seminar on Emerging Areas of Marine and Estuarine Research organized at Department of Marine Sciences, University of Calcutta on 26 March 2019.
- “*Source apportionment of troposphere halocarbons*”- by **Dr. Sayantan Sarkar** at the Land-Ocean-Atmosphere Interaction, Greenhouse Gases and Coastal Processes (LOA 2018) Workshop at IISER Kolkata on 28th July 2018.
- “*My vision of The Indian Museum of Earth (TIME)*”- by **Dr. Devapriya Chattopadhyay** at the TIME International Consultation, Indian National Science Academy, New Delhi, 1-2nd April, 2019.
- “*The utility of modern analogues in Paleontological research: Part 1: Understanding taphonomic processes and Part 2: Developing paleoecologic insight*”, Inter-disciplinary Refresher Course on “Modern Methods in Earth System Science”- by **Dr. Devapriya Chattopadhyay** at the Department of Geological Sciences, Jadavpur University, Kolkata, 29th October, 2018.
- The vital role of collection-based museums in promoting education and research. Brainstorming Meet on “*Rejuvenating Indian Palaeontology and Establishment of National Earth Museum*”- by **Dr. Devapriya Chattopadhyay** at the Indian National Science Academy, New Delhi, 10-11th September, 2018.

Department Day

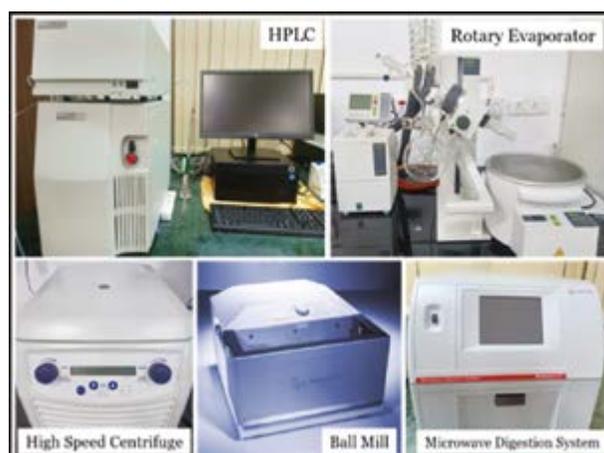
The Department has organized its 7th Annual Department Day, Convergence, on 16th February, where distinguished Geoscientists, from various Institutes of India, presented their research work and interacted with students. The Ph.D. and BS-MS students also presented their work in a poster session.

Projects funded by National Agencies

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Sanctioned Amount (Rs.)
1.	Decoding the late Quaternary track of Indian monsoon in the Gangetic plain and its control on the vegetation and fluvial patterns: a multi-proxy approach.	Prof. Prasanta Sanyal	Science and Engineering Research Board (SERB), Government of India	2018-2021	230 lakhs
2.	Brown carbon and HULIS in the Arctic	Dr. Sayantan Sarkar	National Centre for Polar and Ocean Research, Ministry of Earth Sciences, Govt. of India	2019-2020 (extendable till 2022)	
3.	The nature of biotic interaction and community structure of marine molluscs as a response to regional environmental triggers in a tropical island ecosystem	Dr. Devapriya Chattopadhyay	Science and Engineering Research Board (SERB), Government of India	2019-2021	40.5 laks

Facilities Created

- High-Performance Liquid Chromatography
- Rotary Evaporator
- Masterflex Peristaltic Pump
- High-speed refrigerated centrifuge
- Microwave digestion system
- Ball Mill
- **Petrology teaching lab:** The Department of Earth Sciences has augmented the petrology teaching lab by procuring eleven new petrological microscopes in 2018. One of the microscopes, to be used primarily by the instructor, has imaging capability. The live image can be projected on a 55 inch TV screen for demonstration of objects under the microscope to the entire class. This will enable the instructors to conduct practical classes with more students at a time.



Petrology teaching lab of the Department of Earth Sciences

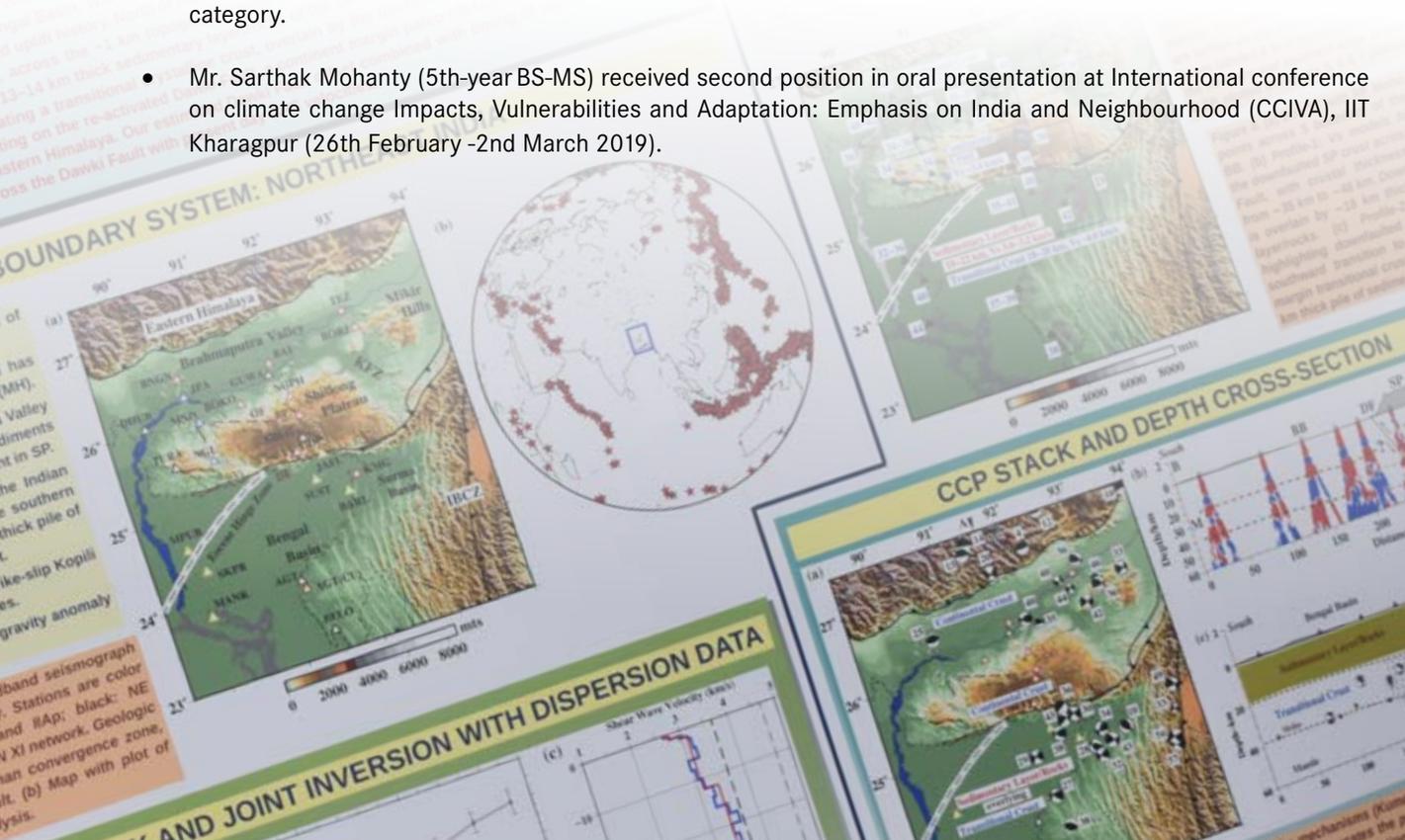
Award and Honours

- **Prof. Supriyo Mitra** has become the Regular Associate (2019-2024) of The Abdus Salam International Centre for Theoretical Physics (ICTP), Italy.
- **Prof. Supriyo Mitra** has been selected for the INSA Bilateral Exchange programme under the International Collaboration/Exchange programme 2018 to visit Germany (GFZ Potsdam) for collaborative research.
- **Prof. Supriyo Mitra** has been selected as the visiting professor (2019) at the Earthquake Research Institute (ERI), The University of Tokyo, Japan.
- The research group led by **Dr. Sayantan Sarkar** (PI) has been selected to participate in the Indian Arctic Expedition 2019-2020 for a project "*Brown carbon and HULIS in the Arctic*". This work has been funded by the National Centre for Polar and Ocean Research (NCPOR), Ministry of Earth Sciences, Government of India.

- **Prof. Prasanta Sanyal** has received funding (INR 2.30 lakhs) from the Science and Engineering Research Board (SERB), Government of India to set up a National facility on Isotope Enabled Organic Geochemistry at IISER Kolkata.
- An International Group led by Prof. Helen Williams (Cambridge University, UK), **Dr. Tarun K. Dalai** (IISER Kolkata), and Dr. Sambuddha Mishra (IISc Bangalore) has received funding from the Global Challenge Research Fund (GCRF) England for a research project entitled “*Sustainable water management in urbanized Lower Bengal: novel isotope tracers of the release of heavy metals in the Ganga (Hoogly) River Estuary*”.
- **Dr. Tarun K. Dalai** has been nominated as a member of the Research and Advisory Council (RAC) of Birbal Sahni Institute of Paleosciences for three years.
- **Prof. Somnath Dasgupta** has been awarded the Wadia Medal by the Indian National Science Academy (INSA).

Students' Achievements

- Mr. Nitin Kumar Khandelwal (iPh.D) has received the best oral presentation and student travel award at *National Environmental Conference (NEC-2019)* held on 31st January – 2nd February 2019 at IIT Bombay.
- Ms. Nisha Singh (Ph. D) has been awarded a travel grant by the Science and Engineering Research Board (SERB), Department of Science and Technology, Government of India for participating in “*MICRO 2018 Fate and Impact of Microplastics: Knowledge, Actions and Solution*” that took place 19th-23rd November 2018 in in Arrecife, Lanzarote, Spain.
- Mr. Jyoti Prasad Das (Ph. D) has received the CSIR Foreign Travel Grant to present his work on integrating conventional strain analysis and anisotropy of magnetic susceptibility (AMS) to address orogen-parallel constructional strain at the *General Assembly of European Geosciences Union (2018)* at Vienna, Austria.
- Mr. Prashant Rawat (5th-year BS-MS) and Ms. Archita Rana (iPh. D) has received the grant to participate in the international workshop on “*cloud dynamics, microphysics, and small-scale simulation (IWCDMS 2018)*” at Indian Institute of Tropical Meteorology (IITM), Pune, India.
- Mr. Prashant Rawat (5th-year BS-MS) and Ms. Archita Rana (iPh. D) have presented their research work at the *Conference of the Indian Aerosol Science and Technology Association (IASTA 2018)* held at IIT Delhi.
- Ms. Pousali Mukherjee (5th-year BS-MS) has received a grant from the Indian Geophysical Union (IGU) to present her research work at the 55th Annual Convention of IGU held at Rabindranath Tagore University, Bhopal, Madhya Pradesh, 4-7 December 2018. She has been selected for the best poster presentation award in the student category.
- Mr. Sarthak Mohanty (5th-year BS-MS) received second position in oral presentation at International conference on climate change Impacts, Vulnerabilities and Adaptation: Emphasis on India and Neighbourhood (CCIVA), IIT Kharagpur (26th February -2nd March 2019).



List of Faculty Members:

Professor

Mitra, Supriyo
Sanyal, Prasanta

Associate Professor

Bhattacharyya, Kathakali
Chattopadhyay, Devapriya
Dalai, Tarun Kumar
Dey, Sukanta (from 26-10-2018)
Jaiswal, Manoj Kumar (from 18-06-2018)
Ray, Sujata (from 21-06-2018)

Assistant Professor Grade-I

Borah, Kajaljyoti
Chatterjee, Swastika (from 30-07-2018)
Darbha, Gopala Krishna
Mandal, Sanjay Kumar (from 01-01-2019)
Sarkar, Sayantan
Sarkar, Tapabrato (from 14-06-2018)

Assistant Professor Grade-II

Shukla, Gaurav (from 19-12-2018)



Department of Mathematics and Statistics



Teaching and Research

The department has continued its growth and evolution in several directions and presently comprising of thirteen regular and one contractual faculty members, forty-one Integrated MS, eight Integrated PhD students, ten PhD students and two Post-doctoral fellows, one project student, and a departmental secretary.

Five new faculty members, Dr. Anirvan Chakraborty, Dr. Sayan Bagchi, Dr. Md. Ali Zinna, Dr. Soumya Bhattacharya and Dr. Imran Habib Biswas have joined us last year. Imran joined as an associate professor while the other four joined as assistant professors. Soumya is a number theorist, Anirvan is a statistician working on high-dimensional data, Zinna is an algebraist, Sayon is harmonic analyst and Imran work in the interface of probability theory and PDE. Their presence has given our core teaching and research mission a major boost.

Our faculty members have continued their quality research work and published in premier journals. It is gratifying to note that the department hosts twelve extra-mural grants at the moment. This is on the higher side when compared with other mathematics departments. Dr. Anirvan Chakraborty became an Associate of the Indian Academy of Sciences, Bangalore for the period 2018-2021, to mention but a few.

The Department continued its weekly seminar series. Around thirty seminars were held last year. We also organized four lecture series given by senior mathematicians of international repute. Last but not least, the department, in collaboration with Indo-French Centre for Applied Mathematics (IFCAM), also organized a Winter School on “Stochastic Methods for Uncertainty Quantification and Sensitivity Analysis of Complex Models” during December 3-14, 2018.

As for students, three PhD students graduated last year, and twelve students completed Masters in Mathematical Sciences, all pursuing their career in premier places now. One PhD student and two of our postdocs found regular faculty positions in premier institutes such as IIT Kharagpur, IIT Bhilai and NIT Rourkela.

List of Faculty Members:

Professor

Nanda, Asok Kumar

Assistant Professor Grade-II

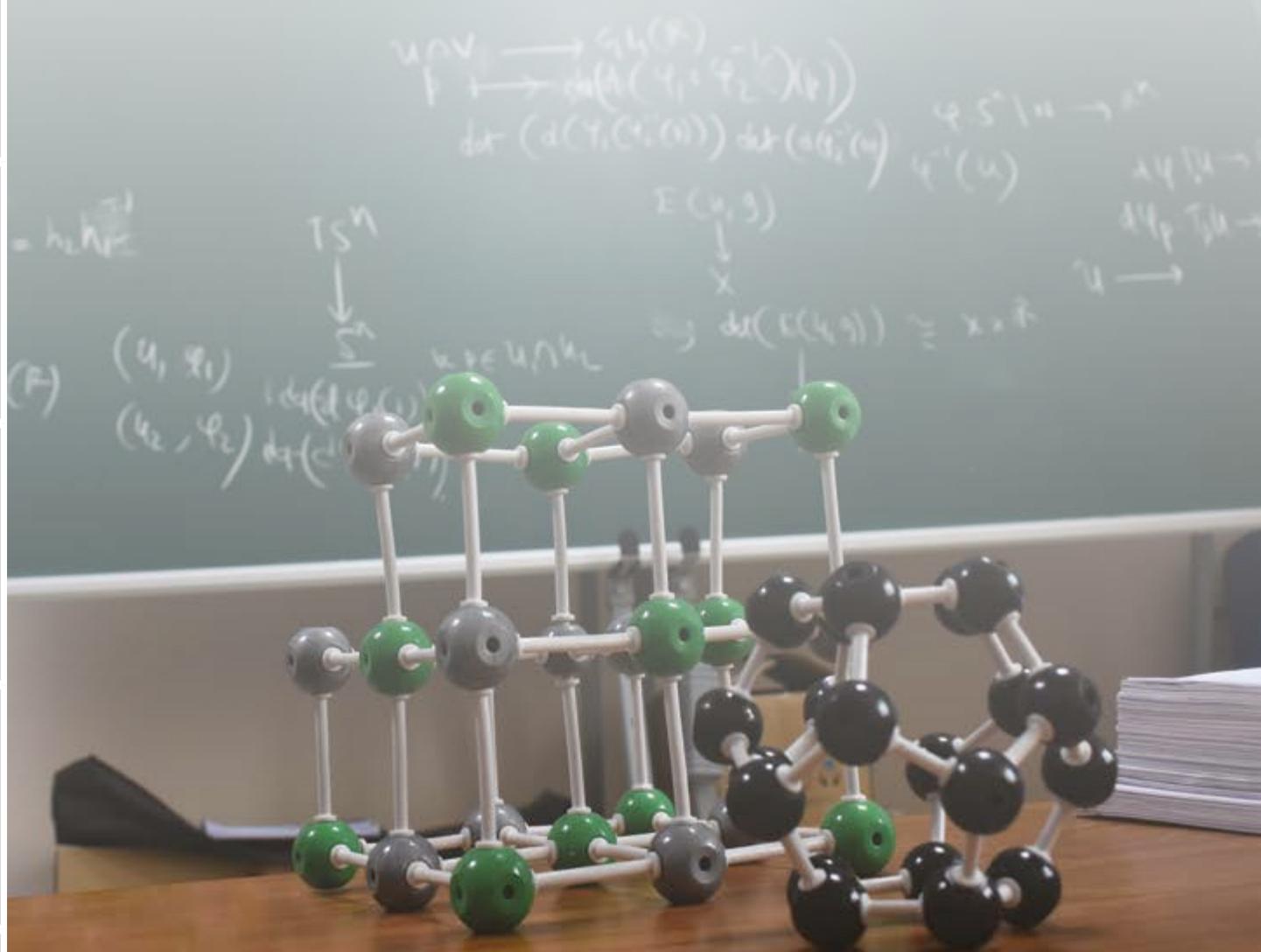
Behera, Ratikanta

Associate Professor

Bandyopadhyay, Saugata
 Banerjee, Anirban (from 13-06-2018)
 Biswas, Imran Habib (from 17-12-2018)
 Roy, Subrata Shyam (from 14-06-2018)

Assistant Professor Grade-I

Bagchi, Sayan (from 29-10-2018)
 Basu, Somnath
 Bhattacharya, Soumya (from 25-06-2018)
 Biswas, Shibananda
 Chakraborty, Anirvan (from 25-06-2018)
 Choudhury, Utsav (till 01-07-2018)
 Chowdhury, Shirshendu
 Das, Koel
 Datta, Swarnendu
 Dutta, Rajib
 Gorai, Sushil
 Mazumder, Satyaki
 Zinna, Md. Ali (from 30-11-2018)



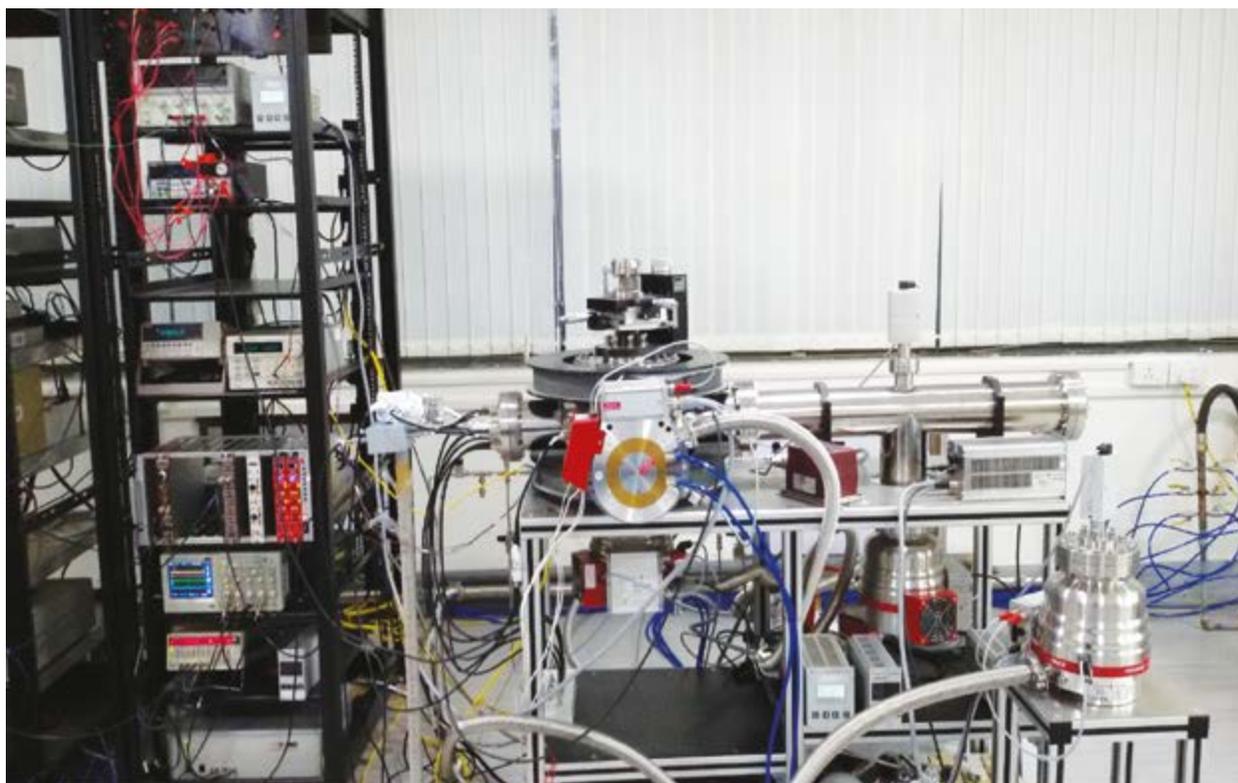
Department of Physical Sciences



Teaching and Research

Since its inception in 2006, the Department of Physical Sciences (DPS) at the Indian Institute of Science Education and Research (IISER) Kolkata has taken rapid strides in establishing high standards of excellence in research and teaching among the community within India and abroad. DPS provides quality education through an extensive program of lecture courses and laboratories spanning various branches of the Physical sciences. Every effort is made in achieving the right balance between the coverage of a broad base of basic courses and a formidable variety of advanced courses. The range of research conducted by DPS faculty matches spans an impressive variety of topics on both experimental and theoretical fronts. The topics currently covered include condensed matter physics and material science, biophysics, soft matter physics, complex systems, light-matter interaction, astrophysics, space science, gravitation and cosmology, high energy physics, atomic and molecular physics, non - linear dynamics, quantum information processing, quantum computation and mathematical physics. At present, DPS has 27 faculty members, 39 integrated Ph.D (I.Ph.D) students, and 56 regular Ph.D students.

DPS is a host to several high-end instruments and facilities such as Micro-Raman Spectrometer, SQUID, custom design velocity map Imaging Spectrometer, multimodal spectroscopy and imaging system, Femtosecond oscillator, Femtosecond amplifier, Atomic Force Microscopy and many others. Additionally, the National Centre for High-Pressure Studies (NCHPS) is a specialised facility that operates under the umbrella of DPS. This recently created centre has facilities that allow achieving megabar pressures and very high temperatures using laser-heated diamond anvil cell (LHDAC) and to study the changes in physical properties of materials in situ using Raman Spectroscopy and electrical transport studies. Over the years, DPS faculties have also contributed to the creation of two other centres of excellence. These include the Centre of Excellence in Space Sciences, India (CESSI) and the National Network for Mathematical and Computational Biology. DPS has recently also inducted a high-performance computational facility for its members.



Experimental setup for absolute dissociative electron attachment cross section measurements in electron collisions with gas phase molecules of interest

This year, we celebrated the 10th year of the existence of DPS with a three day celebration. The event included lectures by eminent colleagues from various branches of physics, as well as several short talks and posters presentations by Ph.D students of DPS. The invited speakers included Pratap Roy Choudhury (TIFR), Debashish Chaudhuri (IOP), Arnab Chatterjee (TCS Labs, Delhi), Ambarish Ghosh (IISc), Saikat Ghosh (IIT Kanpur), N. S. Vidhyadhiraja (JNCASR) and A. De (SINP). In December 2018, DPS faculty members Sourin Das, Prasanta K. Panigrahi, C. Mitra, N. Ghosh, A. Banerjee and N. Kamaraju organized the Asia Pacific Conference and Workshop on Quantum Information Science at IISER Kolkata. In addition, DPS faculty member Nirmalya Ghosh hosted several Optical Society of America (OSA) Traveling Lectures by Prof. Martin J. Leahy (Chair of Applied Physics, NUI Galway, Ireland), Prof. I. Alex Vitkin (Department of Medical Biophysics, University of Toronto, Canada) and Prof. Olivier Martin (Swiss Federal Institute of Technology, Lausanne (EPFL)). The department also runs a vibrant seminar program, hosting leading experts in various fields of physics from India as well as abroad on a regular basis. A few noteworthy visitors during the past year were Diptiman Sen (IISc), Rudolf Roemer (Warwick), Sanjay Puri (JNU), Subir Das (JNCASR), Dilip Angom (PRL), Sumilan Banerjee (IISc), Sajal Dhara (IIT KGP) and Anindya Das (IISc).

We are proud to highlight the research achievements of our PhD and IPh D students. Even as some of them have published single-author papers in respected international journals, several others have delivered presentations at international conferences as well as received offers of post-doctoral fellowships in respected institutions within India and abroad upon the completion of their doctoral research. Several DPS faculty members have been recipients of visiting professorships over the course of the last year, including Amit Ghosal (APS-IUSSTF Professorship Award), Sourin Das (Institute of Advanced Study Residential Fellow, University of Warwick, UK) and Dibyendu Nandi (Wenner-Gren Professorship, Nordic Institute of Theoretical Physics, Sweden). Dibyendu Nandi also received the Laxminarayana & Nagalaxmi Modali Award, Astronomical Society of India this year. A noteworthy extramural funding received this year was Amit Ghosal's SPARC grant for research on novel superconductivity.

Conferences & Workshops & Lectures

- Asia Pacific Conference and Workshop on Quantum Information Science December 19-23, 2018, at IISER Kolkata (Organised by Sourin Das, Prasanta K. Panigrahi, C. Mitra, N. Ghosh, A. Banerjee and N. Kamaraju).
- DPS@10: The Conference to celebrate 10 years of DPS during February 23-25, 2019 at IISER Kolkata.
- Optical Society of America (OSA) Traveling Lectures as faculty mentor of the OSA student chapter of IISER Kolkata (Organised by Nirmalya Ghosh): Prof. Martin J. Leahy (Chair of Applied Physics, NUI Galway, Ireland), Prof. I. Alex Vitkin (Department of Medical Biophysics, University of Toronto, Canada) and Prof. Olivier Martin (Swiss Federal Institute of Technology, Lausanne (EPFL)).

Student Achievements

- Dipayan Chakraborty: Presentation on “A new time of flight mass spectrometer for absolute dissociative electron attachment cross-section measurements”, was selected as a hot topic presentation in 3rd International Workshop on Dissociative Electron Attachment Prague, 10-13th April 2018.
- Prateek Verma was offered a post-doctoral fellowship at the Max Planck Institute for Evolutionary Biology, Plon, Germany.
- Sumit Mukherjee has been awarded the prestigious Israeli PBC fellowship for outstanding post-doctoral researchers from China and India.
- Santanu Pal has received a post-doctoral fellowship at the Department of Physics at IIT-Mumbai.



List of Faculty Members:

Professor (HAG Scale)

Banerjee, Narayan
Banerjee, Soumitro
Panigrahi, Prasanta Kumar

Assistant Professor Grade-I

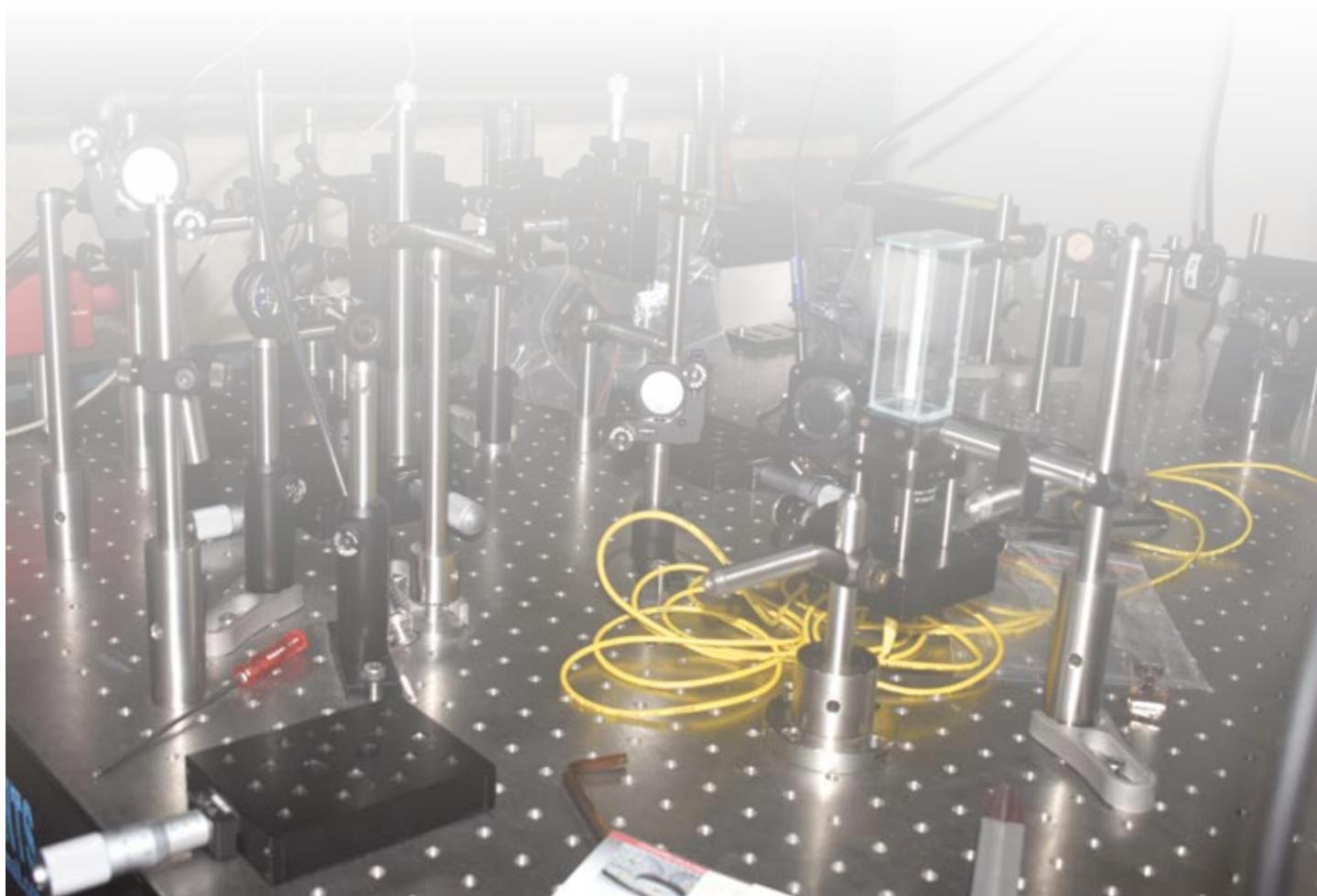
De, Rumi
Lal, Siddhartha
Mitra, Partha
Natarajan, Kamaraju

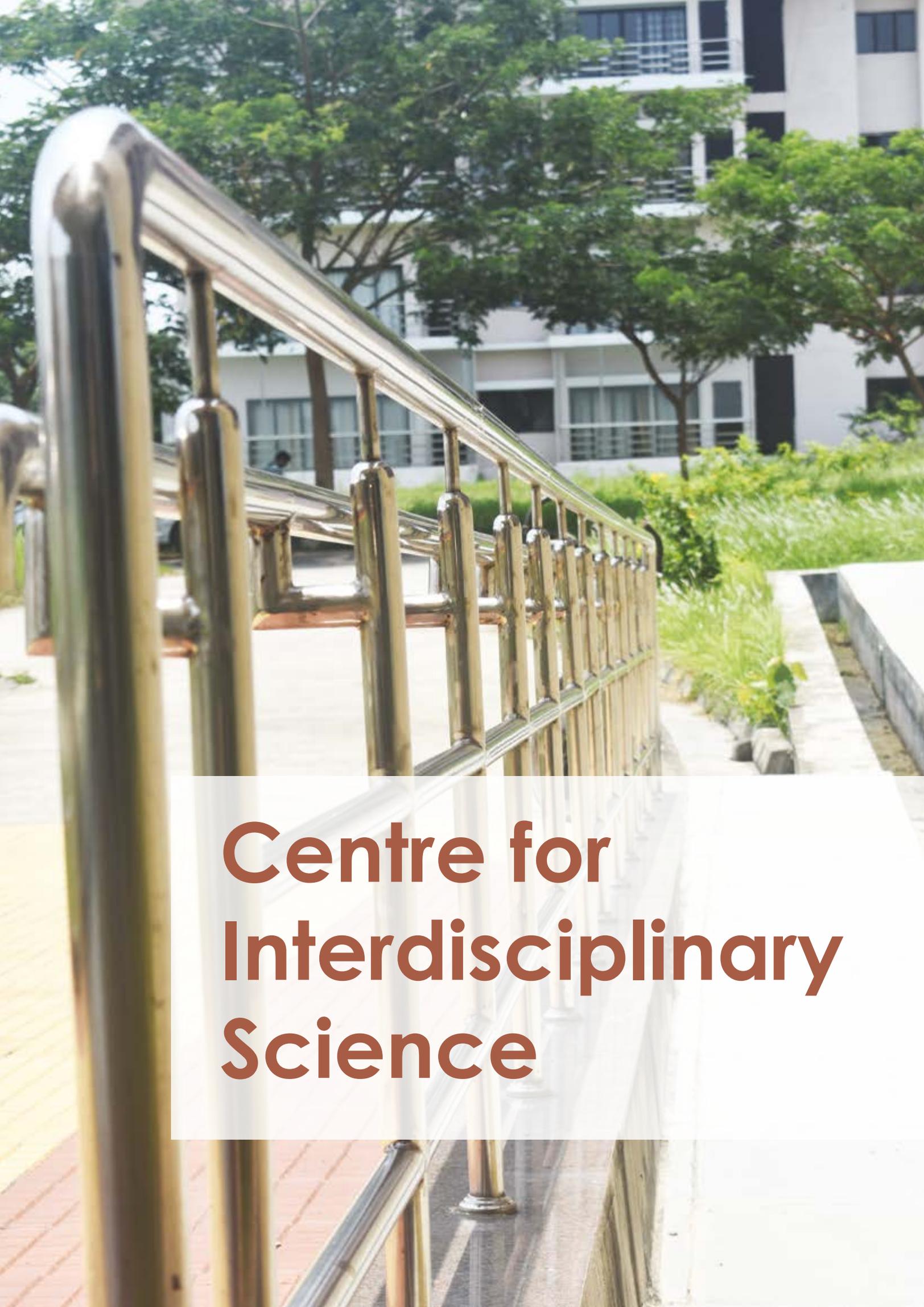
Professor

Banerjee, Ayan	(from 09-10-2018)
Ghosal, Amit	(from 09-10-2018)
Ghosh, Nirmalya	(from 09-10-2018)
Mukherjee, Goutam Dev	(from 09-10-2018)
Mitra, Chiranjib	(from 09-10-2018)
Nandi, Dibyendu	(from 09-10-2018)
Nayak, Rajesh Kumble	(from 09-10-2018)
Pal, Bipul	(from 09-10-2018)

Associate Professor

Bansal, Bhavtosh
Bhattacharyya, Rangeet
Dasgupta, Ananda
Das, Sourin
Ghosh, Anandamohan
Hossain, Golam Mortuza
Kundargrami, Arindam
Nandi, Dhananjay
Raj, Satyabrata
Singh, Ritesh Kumar
Sinha, Subhasis
Sengupta, Supratim





Centre for Interdisciplinary Science

Centre for Advanced Functional Materials (CAFM)



About the Centre

The Centre for Advanced Functional Materials (CAFM) at IISER Kolkata was established on 01 August 2016 and has a special mission to foster collaborative, interdisciplinary research and education in the science and technological applications of advanced solid state and soft materials. With an emphasis on nanoscience and nanotechnology, the research areas of CAFM include hybrid solar cells; fuel cells; strongly correlated materials; polymer and supramolecular delivery vehicles; materials for environmental remediation. CAFM coordinates to foster advanced research towards synthesis of smart materials, structure-property elucidation, device fabrication and cutting-edge applications. Apart from establishing collaboration between researchers within and outside IISER Kolkata, CAFM promotes technology transfer of developed materials and devices. The faculty members of CAFM provide research training to BS-MS, IPhD students, PhD scholars and postdoctoral fellows, and conduct interdisciplinary courses on advanced functional materials.

Events

07 December 2018: CAFM Organized Institute Colloquium by Professor Yury Gogotsi

CAFM organized the Institute Colloquium entitled “Two-Dimensional Carbides and Nitrides (MXenes) Enable New Technologies” by Prof. Yury Gogotsi who is one of the global leaders of nanoscience and nanotechnology. Prof. Yury Gogotsi is Charles T. and Ruth M. Bach Chair Professor and Distinguished University Professor of Materials Science and Engineering at Drexel University in Philadelphia, USA. He also serves as Director of the A.J. Drexel Nanomaterials Institute. He is a world renowned scientist on carbon nanomaterials, batteries, supercapacitors, nanomaterials for energy, water and biomedical applications. He was a leading member of the team that discovered a new family of two-dimensional carbides and nitrides – MXenes with

versatile applications. He has co-authored 2 books, 16 book chapters, more than 600 journal papers, edited 14 books, and obtained more than 50 patents. Currently he is Associate Editor of ACS Nano. In 2018, Prof. Gogotsi is listed among one of the 17 researchers with research of the class of Nobel Prize under Physics category by Clarivate Analytics.

25 February 2019: CAFM Organized Institute Colloquium by Professor Vijayamohan K. Pillai

CAFM organized the Institute Colloquium entitled “Heteroatom Engineered Two-dimensional Materials and their Quantum Dots” by Professor Vijayamohan K. Pillai, Former Director, CSIR-CECRI, Karaikudi, India. Professor Pillai is one of the chief flag bearers of electrochemistry in the country. worked in many areas of

electrochemical power sources, electrochemical sensors and bio-electrochemistry for about two decades at the National Chemical Laboratory, Pune. He has authored over 250 publications and 20 patents related to many innovations in both Electrochemistry and Materials Chemistry, while advising about 20 Ph.D. students in Materials Electrochemistry. In addition to being Director of CSIR-CECRI (April 2012 – October 2018), he held the additional charge as Director, CSIR-NCL, Pune from June 2015 to February 2016. He is at present an Outstanding Scientist at CSIR-Central Electrochemical Research Institute, Karaikudi, Tamil Nadu.

25-26 February 2019: Lecture Series on Electrochemistry

CAFM organized a Lecture Series on Electrochemistry consisting of 2 lectures delivered by Professor Vijayamohan K. Pillai, Outstanding Scientist and Former Director, CSIR-CECRI, Karaikudi, India during 25-26 February 2019. The topics consisted of “Uses and abuses of cyclic voltammetry” and “Application of impedance spectroscopy for battery research”. The stimulating lectures were attended by faculty members and students from IISER Kolkata.

Seminars

09 April 2018

CAFM Seminar by Prof. Sudipta Maiti, TIFR Mumbai, India

Title: Lipid Encased Nanoparticles as a New Tool for Probing Membrane Protein Structures

17 April 2018

CAFM Visitor’s Seminar by Dr. Kaustabh Kumar Maiti, CSIR-NIIST, Trivandrum, India

Title: Exploration of Diagnostic and Theranostic SERS-Nanoprobes for Cancer Management

19 April 2018

CAFM Seminar by Dr. Jayanta Halder, JNCASR, Bangalore, India

Title: Engineering Biomaterials and Antibacterials in the Era of Drug Resistance

21 May 2018

CAFM Seminar by Dr. Prasenjit Mal, NISER Bhubaneswar, India

Title: Supramolecular Catalysis in C-X (X = -O, -N, -S) Bond Synthesis

17 June 2018

CAFM Visitor’s Seminar by Dr. Simanta Pakhira, Florida State University, USA

Title: Advance Technologies for Materials Discovery, Innovation and their Applications

14 September 2018

CAFM Seminar by Prof. Tapas K. Kundu, JNCASR Bangalore and Director, CSIR-Central Drug research Institute, Lucknow, India

Title: Targeting of therapeutic molecules in brain: Implications in neurodegenerative disorder, Cancer and Infectious diseases

24 January 2019

CAFM Seminar by Prof. G. P. Das, IIT Kharagpur and formerly IACS Kolkata, India

Title: Design and Functionalization of 2D Materials and their Heterostructures

06 February 2019

CAFM Seminar by Prof. Sameer Sapra, IIT Delhi, India
Title: Charge Extraction from Transition Metal Dichalcogenides

13 February 2019

CAFM Seminar by Dr. Susanta K. Sarkar, President, CadenzaMed LLC, USA

Title: Seeing is Believing: Molecular Imaging Strategies for Drug Development

07 March 2019

CAFM Seminar by Dr. Chittaranjan Patra, ICT Hyderabad, India

Title: Nanomedicine for the Future Treatment of Various Diseases: Ongoing Research in my Laboratory and Future Challenges

25 March 2019

CAFM Seminar by Prof. A. Sundaresan, JNCASR Bangalore, India

Title: Pyroelectric Magnets: A New Class of Multiferroics

Externally Funded Projects

PI: Dr. Sayan Bhattacharyya
Funding Agency: DST-SERB
Funding Amount: Rs. 65,83,280.00
Reference Number: EMR/2016/001703
Status: December 2016 – Present

N-PDF of Dr. Quazi Arif Islam
PI: Dr. Sayan Bhattacharyya
Funding Agency: DST-SERB
Funding Amount: Rs. 4,00,000.00
Reference Number: PDF/2016/001801
Status: March 2017 – February 2019

N-PDF of Dr. Anima Ghosh
PI: Dr. Sayan Bhattacharyya
Funding Agency: DST-SERB
Funding Amount: Rs. 6,00,000.00
Reference Number: PDF/2016/001650
Status: July 2017 – June 2019

Ph.D. Students Associated with CAFM

CAFM conducts its own Ph.D. interviews to attract students from broader disciplines of biology, chemistry and physics to perform scientific research in interdisciplinary areas beyond traditional boundaries. The selected students are enrolled in the Ph.D. programme of IISER Kolkata under the parent department of their supervisor.

Spring 2018

17RS064 Rohan Chowdhury (Supervisor: Dr. Priyadarsi De)

Autumn 2018

18RS041 Vishwadeepa Hazra (Supervisor: Dr. Sayan Bhattacharyya)

18RS046 Surajit Mondal (Supervisor: Dr. Sayan Bhattacharyya)

18RS052 Subhasish Sahoo (Supervisor: Prof. Priyadarsi De)

18RS060 Swagata Mandal (Supervisor: Prof. Priyadarsi De)



Felicitaton of Professor Yury Gogotsi, Institute Colloquium Speaker by Professor Sourav Pal, Director, IISER Kolkata on 07 December 2018

Centre for Climate and Environmental Studies (CCES)

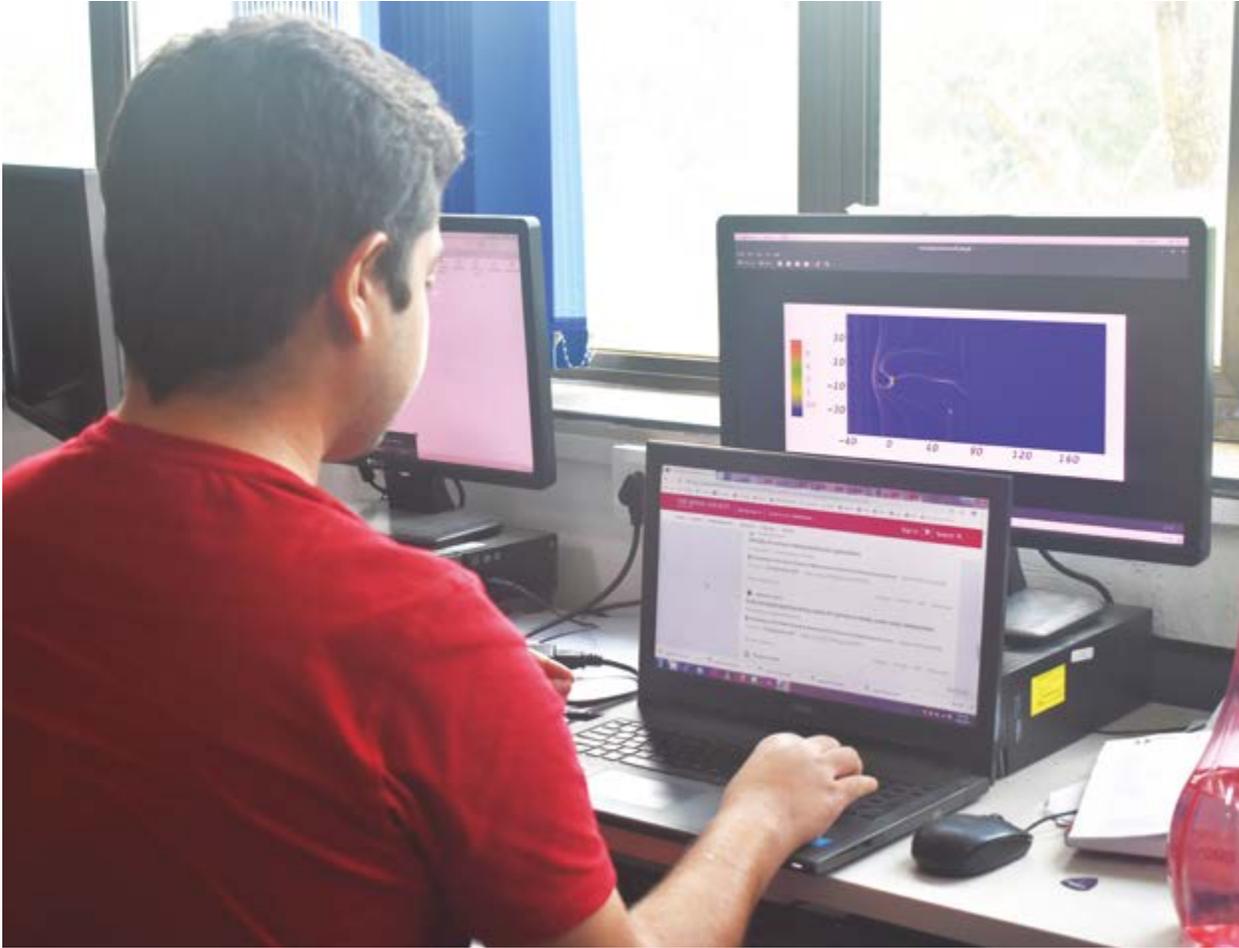


About the Centre

Centre for Climate and Environmental Studies (CCES) is one of the youngest Centres of IISER Kolkata and brings together faculty members from Departments of Biological Sciences (DBS), Chemical Sciences (DCS) and Earth Sciences (DES) in order to strengthen collaborative and interdisciplinary research in the areas of Geological and Environmental Sciences with a strong focus on societal relevance. The current themes of research encompass environmental issues such as arsenic and fluoride removal from groundwater, clean energy, microbial intervention for cost effective wastewater treatment, pollutants in environment and effect on human health, climate change and its effects on the environment, hydrology as well as geohazards. To date, CCES has attracted funding from several extramural funding agencies nationally and internationally including Ministry of Earth Sciences (MoES), International Atomic Energy Agency (IAEA), Science and Engineering Research Board (SERB), World Wide Fund for Nature-India (WWF-India), The Royal Society UK as well as from Industry (WJ Décor) for undertaking projects of societal relevance. Moreover, CCES has been actively involved in organizing regular lecture series as well as organizing workshops and conferences for capacity building nationally and internationally such as the International Workshop on Land-Ocean-Atmosphere Interaction, Greenhouse Gases and Coastal Processes, Training Program on Advanced Methods of Computational Seismology and the Inaugural Symposium of Centre for Climate and Environmental Studies (Understanding Earth: Climate Change to Geohazards). Many of these workshops and conferences were supported by funding agencies such as Science and Engineering Research Board (SERB), Council of Scientific and Industrial Research (CSIR) and National Technical Research Organization (NTRO). The faculty members affiliated with CCES have won recognitions nationally and internationally such as Visiting Professorship at the Earthquake Research Institute (Tokyo), Emerging Investigator in Chemistry, Research Team Member of the Indian Arctic Expedition (2019-2020), Editorial Board Member of Current Organic Synthesis, Editorial Board Member of Environmental Research Communications and SwarnaJayanti Fellowship Award in the area of Earth and Atmospheric Sciences to name a few. Besides, faculty members have filed for patents and some of the work of societal relevance has been extensively covered in print and electronic media. Many students have also won recognition such as the competitive grants to attend in International Workshop on Cloud Dynamics, Microphysics and Small-Scale Simulation, 2018 (IWCDMS2018), American Geophysical Union Travel Grants (AGU), Japan Geosciences Union Travel Grants (JpGU), European Geosciences Union Travel Grants (EGU), Integrated Marine Biosphere Research Travel Grant (IMBeR), Best poster award at 25th ISCB International Conference on Trends in Chemical and Biological Sciences (ISCB-2019), Best Paper and Student Travel Award (NEC19), B4 Synthetic Biology Workshop organized by Harvard University to name a few. Faculty colleagues affiliated with CCES have published in several leading peer-reviewed journals over the last year. A product developed by one of the faculty colleagues affiliated with CCES has been commercialized and supplied to Vikram Sarabhai Space Centre, ISRO.



Center of Excellence in Space Sciences India (CESSI)



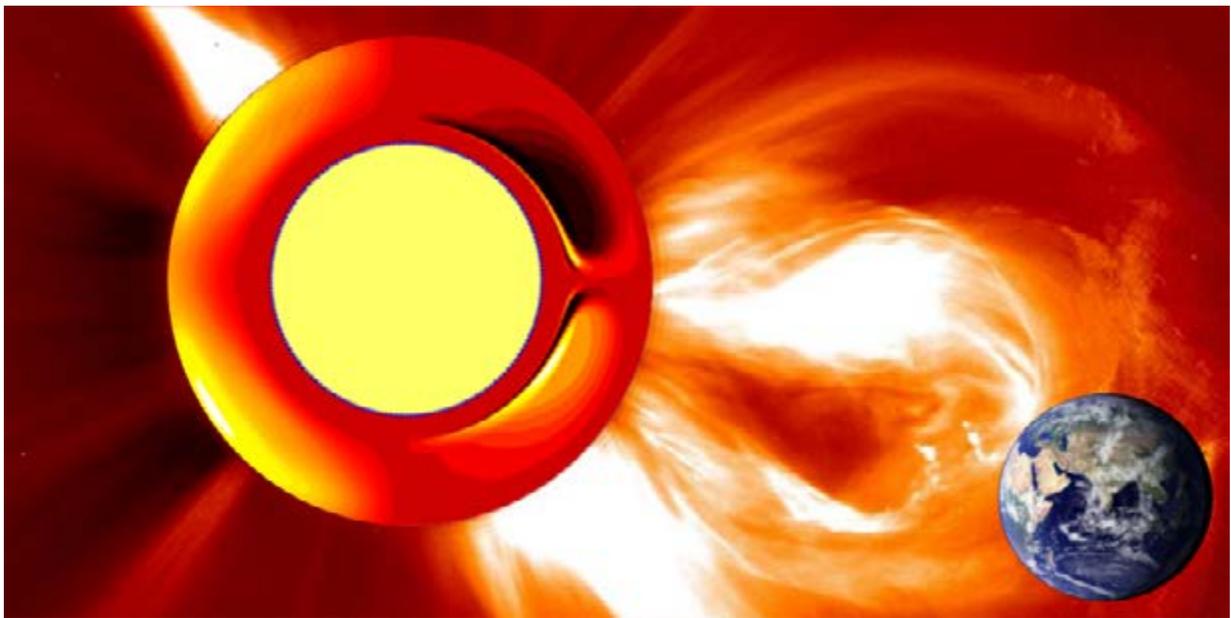
About the Centre

The Center of Excellence in Space Sciences India (CESSI) is a multi-institutional Center at IISER Kolkata established by the Ministry of Human Resource Development, Government of India. CESSI's aims are to explore the Sun's activity and understand its influence on planetary systems such as the Earth, facilitate the development of national space weather forecasting capabilities, hunt for astrophysical gravitational waves, support national space science initiatives, catalyze international and national capacity building activities and pursue public-private partnerships in the space sciences.

This year CESSI published 36 research papers and conference proceedings focussing on understanding and predicting the Sun's activity and the exploration of our astrophysical Universe with gravitational waves. CESSI students and faculty received national and international awards and honours and led capacity building activities both within India and globally, ranging in scope from interactions with school and college children, to management and leadership of mega-projects of national relevance, such as LIGO India and the Aditya-L1 Space Mission. A summary of this year's activities follow.

Research Highlights

A major scientific research result with far reaching implications to have come out of CESSI recently is the prediction of the Sun's activity and expected space environment conditions over the next decade. Prantika Bhowmik and Dibyendu Nandi developed a novel computational modelling approach for coupling magnetic field dynamics in the Sun's interior and surface to perform the first ever data-driven dynamo simulation of century-scale solar activity. Their simulations showed very good agreement with past observations. They also adapted the technique of ensemble forecasting (which has been widely utilized in meteorology and Global Circulation Model based climate forecasts) in their model to assess the possible range of activity for the Sun over the next decade. The CESSI ensemble forecast indicates that sunspot cycle 25 would be similar or slightly stronger than the previous solar cycle, with no indication of an imminent slide to a grand minimum in Sun's activity as had been speculated based on the recent trend in sunspot cycles. This rules out any possibility of Sun-induced global cooling over the next decade. This prediction of the space environment would help in satellite mission planning, satellite life-time estimates and assist in the mitigation of adverse impacts of long-term space weather. The research paper was published in Nature Communications.



The Sun's activity controls our space environment. Dark magnetic spots on the Sun known as sunspots sometimes release vast magnetic storms that can cripple satellite and wreak havoc with our space-reliant technologies. CESSI personnel have used computer simulations of the Sun's magnetic fields (left of above image) to predict the sunspot activity levels expected over the next decade. The prediction would be useful for planning satellite launches, estimating satellite mission lifetimes, the probability of solar storm damage and the Sun's influence on global climate over the next decade.

Awards & Achievements

CESSI PhD students received international travel grants and awards in connection with their academic activities. Amar Deo Chandra as Co-PI received an International Day of Light grant from SPIE for conducting outreach activities in India. Prantika Bhowmik received the Max Hammond student travel award of the American Geophysical Union for presenting her work at the 2018 Union meeting in the USA. Sanchita Pal also received a student travel award for the 2018 American Geophysical Union meeting for presenting her work. Lekshmi B. received a travel grant from the Nordic Institute of Theoretical Physics in connection with the school on Solar Helicities in Theory and Observations: Implications for Space Weather and Dynamo Theory, which was held in Stockholm, Sweden. Integrated BS-MS students of the Department of Physical Sciences, Srijan Das and Rajashik Tarafder who did their MS thesis projects at CESSI were awarded prestigious PhD positions with full fellowship at Caltech and Princeton University, respectively.

Dibyendu Nandi received the 2018 Laxminarayana and Nagalaxmi Modali Award. The award, constituted by the Astronomical Society of India recently, honours contributions made by scientists, normally not beyond 45 years of age, with exceptional achievements and promise in the fields of Astronomy, Astrophysics, Planetary Sciences and allied fields. Dibyendu Nandi was also nominated for, and received the Wenner Gren Visiting Professorship at the Nordic Institute of Theoretical Physics, Stockholm for 2018-2019.

Outreach & Capacity Building Activities

CESSI faculty and students were involved in diverse outreach and capacity building activities this year. This included tutorial lectures at the Annual Astronomy Olympiad training camp held in Homi Bhabha Centre for Science Education (Tata Institute of Fundamental Research) and organization of an Astronomy and Particle Physics session at the Indo-UK Frontiers of Science Symposium held at the UK Royal Society. CESSI faculty were invited to deliver lectures at diverse conferences and organizations including the Workshop on Space Situational Awareness at the National Institute of Advanced Studies (Indian Institute of Science), the International Astronomical Union, the Nordic Institute of Theoretical Physics, the India-UK Entrepreneurial Workshop on LIGO at the Inter-University Centre for Astronomy and Astrophysics, the conference on Multi-messenger Astronomy in the Era of LIGO-India, and workshops at Techno India and the Institute of Engineering and Management.

Rajesh Kumble Nayak and Tarun Souradeep are intimately involved with the implementation of the LIGO India project for which site-development work has been initiated. Several CESSI faculty are involved in the final stages of development of the Variable Emission Line Coronagraph and the Solar Ultraviolet Imaging Telescope which are instruments selected to fly onboard Indian's first solar space mission Aditya-L1. Final testing and integration of these instruments with the spacecraft are expected to happen over the course of the next year. Dibyendu Nandi has been inducted to the Project Management Board of Calcutta University's Stratospheric Tropospheric Radar Facility which is being supported by the Science and Engineering Research Board (SERB) as a national facility to carry out atmospheric research. The Management Board is planning effective scientific utilization of the facility and monitoring progress.

CESSI supported student outreach wing Promote Science visited Kantabele primary school, a local school near IISER Kolkata. The event comprised of an audio-visual talk show followed by a star gazing session with telescopes. The event was attended by around 150 primary school children, their parents, teachers and some locals. Promote Science also visited Adhata Higher-Secondary School where three talks were arranged for students. This event was attended by around 100 students and their teachers and was delivered in the local vernacular (Bengali and Hindi). Dibyendu Nandi spoke with Rajya Sabha TV's Eureka Program on the importance of Solar and Space Sciences in the national context; the interview was aired in Rajya Sabha TV and is available through its online channel.

List of Faculty Members:

Rajesh Kumble Nayak,

IISER Kolkata, Head

Research Area: General Theory of Relativity, Gravitational Waves, Computational Modelling and Data Analysis

Ayan Banerjee,

IISER Kolkata

Research Area: Optics, Precision Spectroscopy, Instrumentation

Dipankar Banerjee

IIA Bangalore

Research Area: Solar Observations, Space Science, Satellite Data Analysis

Nirmalya Ghosh

IISER Kolkata

Research Area: Optics, Polarimetry, Instrumentation

Dibyendu Nandi

IISER Kolkata, PI

Research Area: Solar Astrophysics, Space Science, Sun-Earth System Science, Computational Modelling and Data Analysis

A.N. Ramprakash,

IUCAA Pune

Research Area: Astronomical Observations, Instrumentation

K. Sankarasubramanian

ISRO Bengaluru

Research Area: Solar Observations, Space Science, Instrumentation

Tarun Souradeep

IUCAA Pune

Research Area: Cosmology, General Theory of Relativity, Gravitational Waves, Computational Modelling and Data Analysis

Nandita Srivastava

Udaipur Solar Observatory, PRL

Research Area: Solar Observations, Sun-Earth System Science, Satellite Data Analysis

Prasad Subramanian

IISER Pune

Research Area: Solar Astrophysics, Sun-Earth System Science, Computational Modelling and Data Analysis

Durgesh Tripathi

IUCAA Pune

Research Area: Solar Observations, Space Science, Computational Data Analysis

Bhargav Vaidya

IIT Indore

Research Area: Computational Astrophysics, Astrophysical Plasma Flows

National Centre for High Pressure Studies (NCHPS)



Activities of Centre

- Experiments are carried out for determination of composition of Earth's core. An orthorhombic phase of Fe-C-Si alloy seem to satisfy the density of Earth's core.
- High pressure and low temperature studies are carried out rare-earth oxide and halide perovskites. Interesting structural, electronic transitions have been observed from Raman and photoluminescence studies.



Research and Development Report

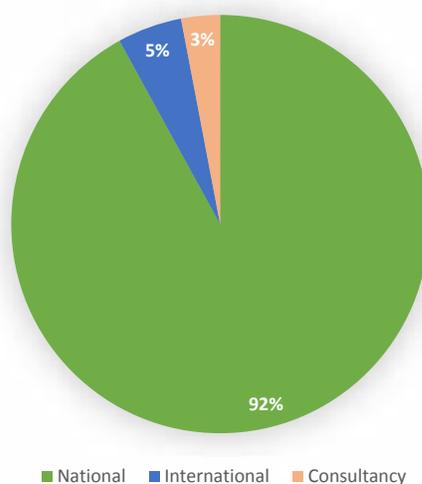
IISER Kolkata aims to be among the leading Institutes for education and research in the country with its contribution at the highest level of scientific and industrial endeavour. The vision of IISER Kolkata is to provide quality science education and to carry out research in basic and frontier areas of science involving both undergraduate and postgraduate student. The Institute has laid a major emphasis on the pursuit of both fundamental and emerging areas of research, as well as on the application of its research findings for industrial and social benefit.

Research and Development activities at the Institute have grown at a rapid pace. Sanction of new R&D projects/schemes during the financial year 2018-19 is ₹ **2182.17** lakhs and total sanctioned amount of R&D projects/schemes executed during the year 2018-19 is ₹ **8710.36** lakhs.

Overview

During the year 2018-19, the Institute received sanction for 37 new sponsored projects/schemes with a total sanctioned amount of ₹1693.01 lakhs, 5 new faculty fellowship/award projects with a sanctioned amount of ₹ 508.59 lakhs. As on 31st March 2019, the number of externally funded ongoing projects/schemes has reached to 87 with a total sanctioned amount of ₹ 4764.77 lakhs, the cumulative count of ongoing faculty fellowship/award projects is 20 with a sanctioned amount of ₹ 2327.28 lakhs and the number of ongoing consultancy projects has reached to 3 with a total sanctioned amount of ₹ 229.18 lakhs. The Institute clearly performed better than the year 2017-18 in respect of receiving new projects/ schemes and overall execution of projects/ schemes in monetary terms.

Funding from major sponsoring agencies



Sanctioned amount of ongoing Projects/Schemes funded by National, International entities and Consultancies

The R&D projects have been sponsored by different Ministries and Departments of the Government of India with major support received from the Ministry of Earth Sciences (MoES), Departments of Science and Technology (DST), Science and Engineering Research Board (SERB), Department of Biotechnology (DBT), Department of Atomic Energy (DAE), Council of Scientific and Industrial Research (CSIR). Indian Council for Medical Research (ICMR), Indian Council for Agricultural Research (ICAR). Extramural projects have been received from departments of Government of Madhya Pradesh and West Bengal. Moreover, the Institute has garnered significant numbers of internationally supported research projects from funding agencies across the globe. Major international funding has been received from the agencies like International Atomic Energy Agency (IAEA), Royal Society UK. In addition and the Institute has also received Extramural Projects from Indo-US Science and Technology Forum (IUSSTF), Indo-German Science and Technology Forum (IGSTF) and DST-RFBR (Department of Science and Technology (GoI) – Russian Foundation of Basic Research).

Consultancy projects have been funded by ADO Additives Mfg. Pvt. Ltd., Invictus Oncology Pvt. Ltd., Unilever Industries Pvt. Ltd., Hi Media Consultancy, Wildlife Trust of India, WJ Décor etc.

Multi Institutional Projects/ Schemes:

IISER Kolkata has become a part of the multi institutional project entitled 'Multi-dimensional Research to Enable Systems Medicine: Acceleration Using a Cluster Approach' funded by Ministry of Science & Technology, Department of Biotechnology DBT, Govt. of India. The major goal of this project is to develop inter-institutional cross-talk on components of Systems Medicine. IISER Kolkata's role is set to develop a state-of-the art 'Animal Facility' in our campus towards 'development of shared infra-structure for generation of basic and translational research'. For this project, an amount of ₹ 10.46 Crores has been sanctioned to IISER Kolkata for procurement of instruments and laboratory set up.

IISER Kolkata has received two extramural projects under the IMPacting Research, INnovation and Technology (IMPRINT-2), a national initiative of the Ministry of Human Resource Development (MHRD) which is jointly funded and steered by MHRD and Department of Science and Technology (DST). The Institute will collaborate with IIT Bombay, IIT Madras, and NCL Pune & Sir Parashurambhau College in this respect.

In addition, Extramural Projects have been received where the Institute will work with Bose Institute Kolkata, Institute of Life Sciences, IIT Guwahati, West Bengal University of Animal and Fishery Sciences and R.G. Kar Medical College & Hospital.

List of major research projects/schemes sanctioned during the year 2018-19

The list of major research projects/schemes sanctioned with sanctioned amount of ₹ 50.00 lakhs and above is as follows.

Project/ Scheme Title	Department/ Centre	Funding Agency	Sanctioned Amount (₹ in lakhs)
Metal complexes of ligands designed to act as antiangiogenic and antimetastatic agents against cancer: Synthesis, characterization, stability and cytotoxicity studies	Dept. of Chemical Sciences	DST	61.00
Roll-to-roll printed electronic labels for temperature, humidity and tampering detections	Dept. of Chemical Sciences	IGSTF	160.60
Bulk Synthesis & discovery of COF material with remarkable chemical stability for Methane Storage	Centre for Advanced Functional Materials (CAFM)	GAIL	118.00
Development of diverse lab-on-a-chip platform for plastic electronics, microcatalysis and biosensing applications using microlithography by directed self-assembly driven by laser induced microbubbles	Dept. of Physical Sciences	SERB	100.62
Decoding the late Quaternary track of Indian monsoon in the Gangetic plain and its control on the vegetation and fluvial patterns: a multi-proxy approach	Dept. of Earth Sciences	SERB	230.17
Increasing Resilience to Earthquake in North India	Centre for Climate and Environmental Studies (CCES)	The Royal Society UK	56.74
Renewable and Sustainable Energy Storage and Production: Conversion of CO ₂ into Formic Acid and Methanol Using Non-Precious Transition Metal Catalysed Hydrogenation	Dept. of Chemical sciences	SERB	232.39
Interfacial crystallization of colvent organic frameworks and colvent organic framework membranes with ultrahigh surface area for molecular separation and methane storage	Dept. of Chemical sciences	SERB	192.00
Role of Connexin-47 in axon-myelin interaction during virus-induced demyelination of the central nervous system	Dept. of Biological Sciences	WT-DBT	170.18
Inspire Faculty Award	Dept. of Earth Sciences	DST	109.63

Centres at IISER Kolkata:

Five inter-disciplinary research centres, namely Centre of Excellence in Space Sciences India (CESSI), National Centre for High Pressure Studies (NCHPS), Centre for Advanced Functional Materials (CAFM), Centre for Climate and Environmental Studies (CCES) and Center for Artificial Intelligence (CFAI) are functioning in Institute. Out of these 5 centres, CESSI is mainly funded by MHRD-FAST, NCHPS is funded by MoES and other 3 centres are funded by the Institute which are also bringing extramural project fund.

Institute support for research activities:

Institute has supported generously the research activities over the years. This year, apart from funding procurement and establishment of state-of-the-art equipments and research facilities, the Institute has provided fund towards Central Gas and Cryogen (total sanctioned amount ₹ 85.00 lakhs) Maintenance of Equipment (total sanctioned amount ₹ 78.50 lakhs), Relocation/Reinstallation expenses (total sanctioned amount ₹ 22.00 lakhs) etc. Some of the major initiatives are as follows.

GRANT FOR CREATION OF RESEARCH FACILITY: This grant has been provided to newly joined faculty members in order to enable them kick start the research activities by establish in the research facility at the earliest. Major equipment purchased from this grant becomes an 'Institute facility'.

MATCHING GRANT: Matching grants have been provided to faculty members to supplement funding from External Funding Agencies, in case of any shortfall of fund towards procurement of equipments under Non-Recurring Grant.

PERFORMANCE GRANT: Institute provides grant for 2 years to faculty members who are Swarnajayanti, INSA, IASc, NASI or TWAS Fellows or have received S S Bhatnagar and B M Birla awards. In this year, an amount of ₹ 40.00 lakhs has been sanctioned as Performance Grant.

GRANTS FOR AMC/REPAIR OF EQUIPMENT PROCURED OUT OF CLOSED EXTRAMURAL PROJECTS: Since significant numbers of equipments are procured out of Extramural Project Funds, the Institute decided to support in terms of annual maintenance and repair of suitable equipments which were procured out of closed Extramural Projects. An amount of ₹ 30.83 lakhs was sanctioned in this respect.

In addition, the Institute has also provided fund to the five departments to enable faculty members in conducting cutting-edge research and teaching.

MAJORE RESEARCH FACILITIES:IISER Kolkata has setup state-of-art research facilities across all the departments and centres. Institute has invested generously to expand and strength the research facilities over the years. IISER Kolkata has established a supercomputer with ~ 80 Tera Flops for the use of its members. It was inaugurated on 1st January 2019 and it will help to solve various current research problems in Physics, Chemistry, Biology and Earth science.



Super Computer at IISER Kolkata

Some of the major equipments added or about to be added (Purchase Orders issued) from Institute and project funds are:

- **Advanced Spectral Confocal Laser Scanning Microscope**
- **Malvern MicroCal™-Isothermal Titration Calorimeter (ITC)**
- **High Throughput and High Precision N₂, CO₂, H₂ and Methan absorption system**
- **Individually Ventilated Animal Caging System**
- **SFM-3000/S Stopped Flow Mixer-200, MOS -200/M Fast UV/VIS Spectrometer**
- **Delta V Plus Isotope Ratio Mass Spectrometer**
- **Surface Plasmon Resonance (SPR)**
- **Dell PowerEdge R540 Server**
- **Avance Neo 500 MHz Spectrometer.**

Intellectual Property (IP) Protection Activities:

Till 31st March 2018, total 13 numbers of Patents have been filed and the details are given below

Sl. No	Patent filed by	Department/ Centre	Title of Patent	Patent Application No
1	Prof. Swadhin K Mandal	Dept. of Chemical Sciences	METHOD OF SYNTHESIS MOLECULES USING CATALYST AND COMPOSITES THEREOF	463/KOL/2013
2	Prof. Swadhin K Mandal	Dept. of Chemical Sciences	METHOD OF SYNTHESIS AND COMPOSITE THEREOF	464/KOL/2013
3	Dr. Sanjio S Zade	Dept. of Chemical Sciences	METAL-ORGANIC COMPLEXES FOR EFFICIENT FIELD EFFECT TRANSISTORS Revised Name: METAL-ORGANIC COMPLEX, DEVICE AND METHOD THEROF	1066/KOL/2013
4	Prof. Raja Shunmugam	Dept. of Chemical Sciences	SENSOR AND METHOD THEREOF Revised Name : SENSOR AND METHOD THEREOF	PCT/IB2014/066077
5	Prof. Raja Shunmugam	Dept. of Chemical Sciences	MOLECULE, AND CADMIUM SENSOR AND METHOD THEREOF	219/KOL/2014
6	Prof. Raja Shunmugam	Dept. of Chemical Sciences	SENSOR AND METHOD THEREOF - ARSENIC Revised Name: SENSOR AND METHOD THEREOF	1310/KOL/2013
7	Prof. Debasish Haldar	Dept. of Chemical Sciences	POSS - APPENDED DIPHENYLALANINE: POLLUTION-PROTECTIVE, AND FIRE- RETARDANT HYBRID MOLECULAR MATERIAL	201831011645 (TEMP/E-1/12251/2018- KOL)
8	Prof. Swadhin K Mandal	Dept. of Chemical Sciences	PROCESS FOR PREPARING METHANOL FROM CARBON DIOXIDE	PCT/IB2017/056698
9	Prof. Swadhin K Mandal	Dept. of Chemical Sciences	CATALYTIC CONVERSION OF CARBON DIOXIDE TO METHANOL	201631037090
10	Prof. Swadhin K Mandal	Dept. of Chemical Sciences	ABNORMAL N-HETEROCYCLIC CARBENE COPPER (I) COMPLEXES, SYNTHESIS AND APPLICATIONS THEREOF	1042/KOL/2013
11	Dr. Soumyajit Roy	Dept. of Chemical Sciences	REDUCTION OF CARBON DIOXIDE COUPLED WITH OXIDATION OF WATER USING CATALYSTSPRODYVIDHI REF. ISRK.0016.IN	530/KOL/2015
12	Dr. Rituparna Sinha Roy	Dept. of Biological Sciences	CATIONIC LIPOPEPTIDE BASED NANOSCALE MATERIALS FOR siRNA DELIVERY	201731040460
13	Dr. Rituparna Sinha Roy	Dept. of Biological Sciences	SELF-ASSEMBLED LD-8 PEPTIDES FOR DRUG DELIVERY AND CANCER NANOTHERAPEUTICS	201731046166

Industry Academia interaction

From very beginning, members of the Institute have brought Extramural Projects/Consultancies/ Schemes from various Non-Government/Industries like WWF-India, GE Global Research, Bangalore, Gunnebo India Private Limited, Unilever, Invictus Oncology, CDA-ICZMP, Hi-Media, Stone India Limited, WJ Décor, ADO Additives Mfg. Pvt. Ltd. etc.

Still the Institute has given major emphasis on interaction with Industry in order to boost the funding as well as much needed collaboration/interaction with Industry. Agreements/ Memorandum of Understandings (MoU) have been signed with prominent Industrial entities which will be beneficial for research fraternity of the Institute as well as will strengthen research infrastructure of the Institute. In this year, agreements/MoUs have signed with various prominent Industrial entities like Gas Authority of India Limited, Tata Steel Limited, Cipla Limited, Tata Medical Center to name a few.

Sponsored Research

Department/ Centre	Total Sanctioned Amount (₹)
Department of Biological Sciences	32,53,41,663.00
Department of Chemical Sciences	27,66,74,506.00
Department of Earth Sciences	8,10,30,679.00
Department of Mathematics and Statistics	4,38,10,674.00
Department of Physical Sciences	10,47,06,549.00
Centre of Excellence in Space Sciences India (CESSI)	49,10,361.00
Centre for Advanced Functional Materials (CAFM)	2,14,36,000.00
Centre for Climate and Environmental Studies (CCES)	1,31,28,180.00
Total (₹)	87,10,38,612.00

Department of Biological Sciences

Project Funded by National Agencies

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Sanctioned Amount (₹)
1.	Strategy for developing a safe and effective control measure against Avian Influenza in chicken: live vector. based mucosal vaccine approach	Dr. Amirul Islam Mallick	SERB	19.03.2016 to 18.03.2019	29,78,250.00
2.	Studying the mechanism of host adaptation by <i>Campylobacter jejuni</i> and developing strategies to control enteric commensalism in chicken	Dr. Amirul Islam Mallick	DBT	13.02.2018 to 12.02.2021	33,72,400.00
3.	Social tendencies of Free. Ranging dogs in different human habitats – Testing the domestication Hypothesis	Dr. Anindita Bhadra	SERB	30.03.2017 to 29.03.2020	40,68,600.00
4.	Fish community structure and patterns of diversity along impacted and un. impacted streams of Vindhya and Satpura hill ranges, Central India	Dr. Anuradha Bhat	MoEF	30.06.2016 to 29.06.2019	26,41,540.00
5.	Neuroprotective function of CD40 in Mouse Hepatitis Virus induced central nervous system infection	Prof. Jayasri Das Sarma	DBT	13.07.2017 to 12.07.2020	58,00,000.00
6.	Role of Amyloid.β in modulating gap junction and hemichannel function: Implication for Alzheimer's disease pathogenesis	Dr. Mahua Maulik	SERB	27.11.2015 to 26.11.2018	38,60,000.00
7.	Efficacy of umbilical cord. derived mesenchymal stem cells under ischemia. like physiological stress conditions	Dr. Malancha Ta	SERB	20.10.2017 to 19.10.2020	44,88,010.00
8.	Bioprospecting of cyan bacteria for cytotoxic and protease inhibitor compounds from special habitats of West Bengal, India	Dr. Manojit Debnath	SERB	01.04.2015 to 31.03.2018 (Ext. by 30.06 .2018)	31,88,000.00

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Sanctioned Amount (₹)
9.	Investigating the role of Insulin signaling in collective cell movement using the model of Border cell Migration In <i>Drosophila oogenesis</i>	Dr. Mohit Prasad	SERB	22.03.2017 to 21.03.2020	50,22,000.00
10.	Understanding the Role of Regulatory particle non-ATPase 3 (Rpn3) in collective cell migration: in vivo studies using border cells in <i>Drosophila oogenesis</i>	Dr. Mohit Prasad	DBT	03.01.2018 to 02.01.2021	44,24,000.00
11.	Thermal Stability, Temperature Induces Conformational Switching and Self. Assembly in Protein Libraries	Dr. Neelanjana Sengupta	SERB	23.12.2016 to 22.12.2019	79,21,100.00
12.	Studies on the mechanisms of action an essential ribosome. associated bacterial GTPase protein CgtA	Dr. Partha Pratim Datta	SERB	26.07.2016 to 25.07.2019	36,55,800.00
13.	Investigating the Structural and Functional Basis of RNA Binding and Post.transcriptional Regulation of Gene Expression by Annexin A2 in Response to Genotoxic Stress	Dr. Partho Sarothi Ray	SERB	27.09.2017 to 26.09.2020	28,36,000.00
14.	Monitoring Harmful Algal Bloom(HAB) along the coasts of West Bengal	Prof.Punyasloke Bhadury	MoES	23.12.2014 to 22.12.2019	55,00,000.00
15.	Shallow water benthic communities and food. web dynamics: A case for Kakinada Bay and Coastal Andhra Pradesh	Prof. Punyasloke Bhadury	MoES	12.08.2015 to 11.08.2019	15,18,500.00
16.	Study on Functioning of biological communities that determine prey base abundance in Sundarbans Biosphere Reserve [24. Parganas (South) Forest Division and Basirhat Forest Division	Prof. Punyasloke Bhadury	WWF India	27.01.2016 to 26.07.2016 (Ext. by 31.05.2018)	4,10,700.00
17.	Potential application of cyanobacteria to reduce bioavailability of arsenic in rice field: a step ahead for safe rice grain	Prof.Punyasloke Bhadury	WB, DBT	31.01.2018 to 30.01.2020	24,47,680.00
18.	Assessment on niche specific oxygenic photoautotrophic organisms for evaluation of Bhagirathi.Hooghly River basin water quality: a biotic index based management proposal	Prof. Punyasloke Bhadury	DST	31.03.2018 to 30.03.2020	43,03,800.00
19.	Understanding the Role of myo. Inositol Hexakisphosphate (IP6) in the Regulation of Bruton's Tyrosine Kinase in B. cell Signaling	Dr. Rahul Das	SERB	12.07.2016 to 11.07.2019	48,55,800.00
20.	Harnessing physically diverse nano scale materials for siRNA delivery to overcome cancer resistance	Dr. Rituparna Sinha Roy	SERB	22.03.2017 to 21.03.2020	46,00,000.00
21.	Engineering improved siRNA based combinatorial nanotherapeutics for managing metastasis and adaptive resistance in breast cancer treatment.	Dr. Rituparna Sinha Roy	DBT	23.02.2018 to 22.02.2021	91,59,800.00
22.	Understanding the degradation and loss of primary forest in the Teesta valley of the Sikkim Himalaya: A framework for recovery and management of biodiversity and bio resources	Dr. Robert Jhon Chandran	NMHS	24.05.2016 to 23.05.2019	23,11,200.00
23.	Fine scale assessment of tiger (<i>Panthera tigris</i>) connectivity networks in Panna Landscape, Madhya Pradesh	Dr. Robert Jhon Chandran	Madhya Pradesh State Biodiversity Board	07.10.2017 to 06.06.2018	11,13,000.00
24.	Life .history constraints in grassland palnt species of the eastern terai in india: Are trade.off associated with competition,growth and defense important for community Structure?"	Dr. Robert Jhon Chandran	SERB	30.03.2019 to 29.03.2022	35,60,577.00
25.	Population and species survival assessment of red panda (<i>Ailurus fulgens</i>) in Singhalila National Park, West Bengal: potential trajectory following re.stocking of the population under the captive breeding programme	Dr. Robert Jhon Chandran	WBZA	22.01.2019 to 21.01.2020	23,37,000.00
26.	Biochemical and functional characterization of alpha carbonic anhydrase from <i>Leishmania major</i>	Dr. Rupak Datta	DBT	08.06.2017 to 07.06.2020	40,13,000.00

Important Administrative Committees

Administrative Staff List

Administrative Report

Computer Centre

Library

International Relations and Outreach Report

Students' Affairs Report

Students' Achievements

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Sanctioned Amount (₹)
27.	Molecular characterization of leishmania major bicarbonate transporter and studying its role in parasite physiology	Dr. Rupak Datta	SERB	11.10.2018 to 10.10.2021	26,90,000.00
28.	Characterization and engineering of enzymes to reduce biomass recalcitrance	Dr. Supratim Datta	SERB	24.03.2017 to 23.03.2020	52,96,800.00
29.	Biochemical and functional characterization of two forms of Leishmania major and their role in infectivity of the parasite	Dr. Sankar Maiti	DBT	20.04.2018 to 19.04.2021	44,45,520.00
30.	Decision making in the context of relocation in an Indian ant: Small brains and big feasts?	Prof. Sumana Annagiri	SERB	19.12.2018 to 18.12.2021	43,87,800.00
31.	The Development and implementation of sensors and treatment technologies for fresh water systems in India	Prof. Tapas K. Sengupta	DST	28.03.2018 to 27.03.2021	33,73,300.00
32.	Developing an in vitro neural cell culture model to understand the mechanism of neuronal cell death in Systemic Lupus Erythematosus SLE	Prof. Jayasri Das Sarma	DBT	05.06.2018 to 04.06.2021	39,82,100.00

System Medicine Cluster (SyMeC)

Sl. No.	Title	Sponsoring Agency/ Department	Duration	Sanctioned Amount (₹)
1.	"Multi-dimensional Research to Enable System Medicine: Accelerating using a Cluster Approach' at Kalyani, West Bengal" (SyMeC)	DBT Department of Biological Sciences	04.04.2017 to 03.04.2021	10,45,65,000.00

Project Funded by National Agencies transferred from other Institute

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Sanctioned Amount (₹)
1.	Mechanistic Studies on Trafficking of human copper ATPase ATP7B	Dr. Arnab Gupta	SERB	12.08.2016 to 11.08.2019	38,72,000.00

Project Funded by International Agencies

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Sanctioned Amount (₹)
1.	Nitrogen Pollution in Large River System: A Case Study in the River Ganga, India	Prof. Punyasloke Bhadury (Co.PI: Prof. Prasanta Sanyal	IAEA (International Atomic Energy Agency)	15.04.2016 to 14.04.2019	2,90,710.00

Project under Fellowships/ Awards

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Sanctioned Amount (₹)
1.	Understanding cell membrane homeostasis during cell stretch (Wellcome Trust/DBT India Alliance Intermediate Fellowship)	Dr. Bidisha Sinha	WT DBT	01.10.2013 to 30.09.2018	3,51,12,814.00
2.	Ramalingaswami Fellowship	Dr. Rahul Das	DBT	25.05.2016 to 24.05.2021	32,50,000.00
3.	Novel regulatory mechanisms of human copper transporters ATP7B and CTR1	Dr. Arnab Gupta	WT DBT	01.05.2017 to 30.04.2022	3,50,20,260.00
4.	Role of Connexin.47 in axon-myelin interaction during virus-induced demyelination of the central nervous system	Dr. Mahua Maulik	WT DBT	01.01.2019 to 31.12.2023	1,70,18,602.00

Consultancy Projects

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Sanctioned Amount (₹)
1.	Validation of differentiated neural cells in culture	Prof. Jayasri Das Sarma	Hi. Media Consultancy	08.11.2013 to 31.05.2018	10,00,000.00
2.	Research Collaboration between IISER.K and WJ Décor	Prof. Punyasloke Bhadury	WJ Décor	17.07.2017 to 30.06.2018	6,50,000.00

Department of Chemical Sciences

Project Funded by National Agencies

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Sanctioned Amount (₹)
1.	Density functional theory of many. electron systems in Cartesian grid	Dr. Amlan K Roy	SERB	05.10.2015 to 04.10.2018	25,21,000.00
2.	Dynamics of Water Dissociation on Cu. Ni and Ag. Ni Alloy Surfaces	Dr. Ashwani Kumar Tiwari	SERB	01.04.2016 to 31.03.2019	45,76,000.00
3.	Metal complexes of β .Lactams: Investigation of the combination of cholesterol depletion and DNA crosslinking to develop new anticancer agents	Prof. Arindam Mukherjee	CSIR	21.05.2018 to 20.05.2021	8,75,000.00
4.	Metal complexes of ligands designed to act as antiangiogenic and antimetastatic agents against cancer: Synthesis, characterization, stability and cytotoxicity studies	Prof. Arindam Mukherjee	DST	21.05.2018 to 20.05.2021	61,00,000.00
5.	Development of First. Row. Transition Metal Catalysts for Catalytic Asymmetric Reductive Fictionalization Reactions	Dr. Biplab Maji	SERB	10.03.2017 to 09.03.2020	28,69,000.00
6.	Synthesis of the oligosaccharides related to the o.antigens from E. coli O74,O145 and O156 with scope for Futher Glycol.cunjugates and vaccine designing	Prof. Balaram Mukhopadhyay	SERB	19.12.2018 to 18.12.2021	37,34,500.00
7.	Stabilizing Sensitive Organic and Catalysts in Solid State by Crystal Engineering Approach	Prof. C. Malla Reddy	SERB	24.09.2018 to 23.09.2021	42,90,000.00
8.	Single particle photoluminescence investigation of multi chromo phoric π . stacked aggregates	Dr. Debansu Chaudhuri	SERB	17.08.2015 to 16.08.2018	71,90,000.00
9.	Rational development of regioselective difunctionalizations of arenes using carboxylates as deciduous groups under Indo.Germany Joint project	Dr. Debasis Koley	DST (International Bilateral Cooperation Division)	30.10.2017 to 29.10.2020	30,49,000.00
10.	Self.Propagating Minimal Catalysts: Functional Amyloid Nanostructures for Chemical Evolution	Dr. Dibyendu Das	DST. Nanomission	12.12.2017 to 11.12.2020	52,97,560.00
11.	Dissipative Microphases Regulated by Emergence of Catalytic Behaviour in Supramolecular Peptide Assemblies	Dr. Dibyendu Das	SERB	10.12.2018 to 09.12.2021	49,06,704.00
12.	Synthesis of Functionalized Lipids and Exploration of Proteins. Lipid Cross talk during Flavivirus Infection	Dr. Pradip Kumar Tarafdar	SERB	10.03.2017 to 09.03.2020	46,14,000.00
13.	Synthesis and characterization of carbon nano particle photo induced transfer molecular devices	Prof. Pradipta Purkayastha	SERB	12.02.2016 to 11.02.2019	20,40,000.00
14.	Study on Photoinduced Electron Transfer Between Pristine and Cyclodextrin Modified Carbon Dots and DNA Duplex	Prof. Pradipta Purkayastha	CSIR	01.05.2018 to 30.04.2021	5,83,333.00
15.	Synthesis, Photo physics and Ultrafast fluorescence dynamics of Fluorescent Protein Chromophore Analogues	Dr. Prasun Kumar Mandal	CSIR	06.07.2016 to 05.07.2019	16,96,000.00
16.	Polymerization induced Nanostructure materials from fatty acid based renewable resources	Prof. Priyadarsi De	CSIR	24.02.2017 to 23.02.2020	21,46,000.00
17.	Bile Acid Containing Amino Acid Based Cationic Polymeric Architectures For Enhanced Actin Polymerization	Prof. Priyadarsi De	SERB	13.03.2018 to 12.03.2021	57,19,560.00

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Sanctioned Amount (₹)
18.	Well. defined Amphiphilic Block Copolymers for Pharmaceutical Applications under Indo. Belarus joint project	Prof. Priyadarsi De	DST (International Division)	24.03.2017 to 23.03.2020	19,03,500.00
19.	New Class of Biodegradable Polymer as Theranostic Agent for Multiple Tumors Using a Single Target	Prof. Raja Shunmugam	SERB	16.01.2016 to 15.01.2019	63,98,000.00
20.	Synthesis and Optical Properties of Small Molecular Weight Organic P. type Semiconductors	Dr. Ratheesh K Vijayaraghavan	SERB	26.11.2015 to 25.11.2018	23,00,000.00
21.	New Conjugated System for Organic Electronic Devices	Dr. Sanjio Shankarrao Zade	SERB	05.10.2015 to 04.10.2018	35,47,000.00
22.	Light driven switching of acidity and control of catalytic activity	Dr. Subhajit Bandyopadhyay	SERB	16.01.2019 to 15.01.2021	44,66,704.00
23.	Development of a smartphone app for low cost in.field monitoring of water quality via colour and turbidity analysis	Dr. Subhajit Bandyopadhyay	MHRD	22.01.2018 to 21.01.2021	34,84,800.00
24.	Transition Metal Catalyzed Transfer Hydrogenation and Metal. Organo Co. operative Catalysis: Versatile Routes to Valuable Molecular Scaffolds	Dr. Suman De Sarkar	SERB	14.07.2016 to 13.07.2019	32,40,000.00
25.	Design of Host.Guest Supramolecular Polymers in Aqueous Media: Adaptive Materials with self. healing and Stimuli.responsive Properties	Dr. Supratim Banerjee	SERB	05.10.2017 to 04.10.2020	51,37,000.00
26.	Catalytic Asymmetric Fluorination / Trifluoromethylation by C.H Activation	Dr. Sureshkumar Devarajulu	SERB	28.09.2017 to 27.09.2020	37,92,000.00
27.	Boron and Gadolinium Nanoparticles for Cancer Diagnosis and Therapy	Prof. Swadhin K. Mandal	DST.BRICS	21.03.2018 to 20.03.2021	36,13,712.00
28.	Development of Layered transition metal dichalcogenides for efficient energy storage: Synthesis and supercapacitor applications	Dr. Venkataramanan Mahalingam	DST	08.02.2018 to 07.02.2021	61,46,800.00
29.	Development of Fe.Complex for catalytic C.H Bond Hydroxylation in Natural products using only O ₂ as the oxidant	Dr. Sayam Sen Gupta	SERB	03.11.2018 to 02.11.2021	4,07,000.00
30.	Renewable and Sustainable Energy Storage and Production: Conversion of CO ₂ into Formic Acid and Methanol Using Non.Precious Transition Metal Catalysed Hydrogenation	Prof. Sourav Pal	SERB	26.03.2019 to 25.03.2022	2,32,39,600.00
31.	Studies on method to slow down the excited state dynamics of metal nanoclusters to enhance fluorescence quantum yield	Prof. Pradipta Purkayastha	SERB	30.03.2019 to 29.03.2022	29,18,695.00
32.	Green Synthetic Routes to Develop Ultra small Luminescent Nanocrystals for Sensing Applications	Dr. Venkataramanan Mahalingam	SERB	05.10.2015 to 04.10.2018	35,40,000.00

Project Funded by National Agencies transferred from other Institute

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Sanctioned Amount (₹)
1.	Development of Fe(III) complexes of biuret based macrocyclic ligands: From catalysts for C.H activation to chemical probes for signal amplification in analyte detection	Dr. Sayam Sen Gupta	SERB	15.07.2015 to 14.07.2018	49,26,000.00

Project Funded by International Agencies

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Sanctioned Amount (₹)
1.	Computational Investigation of bi. metallic and tri. metallic complex mediated homogeneous catalysis	Dr. Debasis Koley	Technical University Kaiserslautern	05.08.2015 to 06.08.2018	7,08,978.00
2.	Roll.to.roll printed electronic labels for temperature, humidity and tampering detections	Dr. Debansu Chaudhuri	Indo.German	15.03.2019 to 14.03.2022	1,60,60,320.00
3.	Engineering Applications of Designer Nano Particle Assemblies	Dr. Sayam Sen Gupta	IUSTTF	15.04.2018 to 14.04.2020	40,46,599.00

Project under Fellowships/ Awards

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Sanctioned Amount (₹)
1.	Inspire Faculty Award	Dr. Biplab Maji	DST	16.08.2016 to 15.08.2021	35,00,000.00
2.	Swarna Jayanti Fellowship	Dr. C. Malla Reddy	SERB	02.03.2016 to 01.03.2021	2,41,21,200.00
3.	Inspire Faculty Award	Dr. Pradip Kumar Tarafdar	DST	25.08.2014 to 24.08.2019	86,27,428.00
4.	Interfacial crystallization of colvent organic frameworks and colavent organic frmaework membranes with ultrahigh surface area for molecular separation and methane storage	Dr. Rahul Banerjee	SERB	16.08.2018 to 15.08.2023	1,92,00,000.00
5.	Inspire Faculty Award	Dr. Subhas Samanta	DST	29.04.2015 to 28.04.2020	86,27,428.00
6.	Ramanujan Fellowship	Dr. Sureshkumar Devarajulu	DST	08.02.2016 to 07.02.2021	89,00,000.00
7.	Designing liposomal drug/gene delivery systems for targeted cancer therapy and in vivo dendritic cell targeted DNA vaccination	Dr. Arabinda Chaudhuri	DAE	04.09.2018 to 03.09.2021	12,76,188.00

Fellowships/ Awards transferred from other Institute

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Sanctioned Amount (₹)
1.	J C Bose Fellowship	Prof. Sourav Pal	SERB	21.07.2008 to 21.07.2023	63,19,996.00
2.	Inspire Faculty Award	Dr. Dibyendu Das	DST	22.05.2013 to 21.05.2018	83,00,000.00

Consultancy Projects

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Sanctioned Amount (₹)
1.	Development of novel stimuli. responsive gel forming polymers as non. aluminum antiperspirant	Dr. Priyadarsi De	Unilever	29.10.2016 to 28.10.2019	39,33,075.00
2.	Development of Norbornene based Polymers as multi. functional materials in the construction application	Dr. Raja Shunmugam	ADO Additives Mfg Pvt. Ltd.	01.07.2015 to 30.06.2016 (Ext. by 30.06.2019)	34,92,500.00
3.	Technical collaboration grant agreement executed between Invictus Oncology Private Limited	Dr. Swadhin K. Mandal	Invictus Oncology Private Limited	01.04.2015 to 31.03.2018 (Ext. by 31.03.2019)	1,82,92,326.00

Department of Earth Sciences

Project Funded by National Agencies

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Sanctioned Amount (₹)
1.	Luminescence Chronology of Pale flood and Aeolian dunes deposit in Kaveri Basin: Implication to Holocene climate reconstruction	Dr. Manoj Kumar Jaiswal	MoES	19.02.2015 to 18.02.2020	96,85,200.00
2.	Tracking pesticide concentration in Urban concrete surface	Dr. Sujata Ray	SERB	28.03.2016 to 27.03.2019	19,00,000.00
3.	Arsenic release and movement from arsenic elevated paddy soil in Bengal Delta region of India during monsoonal flooding	Dr. Manoj Kumar Jaiswal & Dr. Sutapa Bose	MoES	14.03.2016 to 13.03.2019	44,98,000.00

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Sanctioned Amount (₹)
4.	Stability and transport properties of nanopesticides in the soil environment: Understanding the safety of applying nanotechnology to the agricultural sector	Dr. Gopala Krishna Darbha	SERB	18.08.2017 to 17.08.2020	48,46,000.00
5.	Decoding the late Quaternary track of Indian monsoon in the Gangetic plain and its control on the vegetation and fluvial patterns: a multi.proxy approach	Prof. Prasanta Sanyal	SERB	28.01.2019 to 27.01.2022	2,30,16,800.00
6.	The nature of biotic interaction and community structure of marine molluscs as a response to regional environmental triggers in a topical island ecosystem	Dr. Devapriya Chattopadhyay	SERB	19.03.2019 to 18.03.2022	40,50,400.00
7.	Late Quaternary Geomorphic Evaluation of alluvial fans in Himalayas: Implication to past climate reconstruction and Tectonic activity	Dr. Manoj Kumar Jaiswal	ISRO	29.09.2018 to 28.09.2021	34,51,000.00

Project Funded by International Agencies

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Sanctioned Amount (₹)
1.	Application and development of Isotope techniques to evaluate human impact on water balance and nutrient dynamics of Large RiverBasins	Prof. Prasanta Sanyal	IAEA (International Atomic Energy Agency)	29.05.2014 to 28.05.2018	7,16,836.00
2.	Sustainable water management in urbanised Lower Bengal: novel isotope tracers of the release of heavy metals in the Ganga (Hooghly) River Estuary	Dr. Tarun Kumar Dalai	GCRF	01.02.2019 to 31.07.2019	19,43,510.00

Project under Fellowships/ Awards

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Sanctioned Amount (₹)
1.	Inspire Faculty Award	Dr. Adrita Choudhuri	DST	23.04.2018 to 22.04.2023	1,09,63,533.00

Fellowships/ Awards/EMR Project transferred from other Institute/International

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Sanctioned Amount (₹)
1.	Ramanujan Fellowship	Dr. Gopala Krishna Darbha	DST	20.05.2016 to 19.05.2021	89,00,000.00
2.	Origin and evolution of crust in the NE part of the Singhbhum craton: constraints from geochemistry and geochronology of granitoids	Dr. Sukanta dey	MoES	20.08.2015 to 19.08.2019	29,59,200.00
3.	Possible Hadean to Archaean crustal evolution in the Singhbhum craton: an investigation into the detrital zircon archive	Dr. Sukanta dey	SERB	13.09.2017 to 12.09.2020	41,00,200.00

Department of Mathematics and Statistics

Project Funded by National Agencies

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Sanctioned Amount (₹)
1.	Tensor-valued wavelet analysis and application to solution of differential equations	Dr. Ratikanta Behera	SERB	07.02.2018 to 06.02.2021	18,74,000.00
2.	On the Equation $(\nabla U)_t = \nabla u = G$ & its Linearization, & Applications to Calculus of Variations	Dr. Saugata Bandyopadhyay	SERB	21.06.2018 to 20.06.2021	6,60,000.00
3.	A Dynamically Adaptive Wavelet Algorithm for Solution of Evolution Equations with Localized Structures	Dr. Ratikanta Behera	SERB	13.06.2018 to 12.06.2021	6,60,000.00
4.	Combinatorial Aspects of Maps Between Homotopy Associative Spaces	Dr. Somnath Basu	SERB	13.06.2018 to 12.06.2021	6,60,000.00

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Sanctioned Amount (₹)
5.	Polynomial convexity of yhr finite union of Lagrangians in C_n	Dr. Sushil Gorai	SERB	13.06.2018 to 12.06.2021	6,60,000.00
6.	Realization and Classification of Homogeneous Operators via Quotient Modules	Dr. Shibananda Biswas	SERB	13.06.2018 to 12.06.2021	6,60,000.00
7.	Study of Different Spectral Properties of Nonuniform Hypergraphs	Dr. Anirban Banerjee	SERB	13.06.2018 to 12.06.2021	6,60,000.00

Project under Fellowships/ Awards

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Sanctioned Amount (₹)
1.	Inspire Faculty Award	Dr. Rajib Dutta	DST	23.09.2016 to 22.09.2021	35,00,000.00
2.	Inspire Faculty Award	Dr. Shirshendu Chowdhury	DST	28.04.2015 to 27.04.2020	86,27,428.00
3.	Inspire Faculty Award	Dr. Shibananda Biswas	DST	16.07.2012 to 15.07.2018	86,27,428.00
4.	Inspire Faculty Award	Dr. Soumya Bhattacharyya	DST	04.10.2017 to 03.10.2022	86,27,428.00
5.	Inspire Faculty Award	Dr. Md Ali Zinna	DST	17.01.2017 to 16.01.2022	85,94,390.00

Department of Physical Sciences

Project Funded by National Agencies

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Sanctioned Amount (₹)
1.	Study of molecular dynamics in the low-energy electron collisions with jet-cooled molecules	Dr. Dhananjay Nandi	SERB	09.09.2015 to 08.09.2018	49,47,000.00
2.	Physical properties of elemental solids, their compounds and oxides, and mineral phases at extreme conditions of pressure and temperature: an experimental and theoretical study	Dr. Goutam Dev Mukherjee	MoES	13.07.2011 to 31.07.2018	6,44,65,360.00
3.	Studies of Spin Orbit Interaction of Light in Optical Tweezers	Dr. Ayan Banerjee	SERB	06.08.2018 to 05.09.2021	40,97,500.00
4.	Theoretical study of the dynamics and mechanosensitivity of cell adhesion under time varying stretch	Dr. Rumi De	SERB	30.03.2015 to 30.09.2018	21,86,800.00
5.	Entanglement Dynamics and Quantum Information Processing in Spin Systems	Dr. Chiranjib Mitra	SERB	24.09.2018 to 23.09.2021	49,47,085.00
6.	The Role of polarization observables at LHC/ILC and search for exotic long-lived colored scalars at LHC	Dr. Ritesh Kumar Singh	SERB	26.10.2018 to 25.10.2021	24,59,600.00
7.	Development of diverse lab-on-a-chip platform for plastic electronics, microcatalysis and biosensing applications using microlithography by directed self-assembly driven by laser induced microbubbles	Dr. Ayan Banerjee	SERB	15.01.2019 to 14.01.2022	1,00,61,704.00

Project under Fellowships/ Awards

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Sanctioned Amount (₹)
1.	J C Bose Fellowship	Prof. Soumitro Banerjee	SERB	07.01.2016 to 06.01.2021	91,40,000.00
2.	Study of Black hole thermodynamics in modified and quantum theories of gravity	Dr. Bhramar Chatterjee	DST	28.09.2018 to 27.09.2021	24,01,500.00

Centre of Excellence in Space Sciences India (CESSI)

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Sanctioned Amount (₹)
1.	Advanced Computational Models to Facilitate Solar Activity and Space Weather Predictions	Dr. Dibyendu Nandi	IFCPAR	01.01.2015 to 31.12.2018	49,10,361.00

Centre for Advanced Functional Materials (CAFM)

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Sanctioned Amount (₹)
1.	Perovskite Oxide Nano particle Catalyzed Overall Water Splitting Driven by Perovskite Solar Cells	Dr. Sayan Bhattacharyya	SERB	26.12.2016 to 25.12.2019	65,83,280.00
2.	Bulk Synthesis & discovery of COF material with remarkable chemical stability for Methane Storage	Dr. Rahul Banerjee	GAIL	26.10.2018 to 25.10.2020	1,18,00,000.00
3.	Effect of Ion Specificity of Nano.Structuring in Ion.containing Polymer Systems Caused by ION Association in Organic and Aqueous Media: Complex Experimental and Theoretical Study	Prof. Priyadarsi de	DST.RFBR	05.02.2019 to 04.02.2021	30,52,720.00

Centre for Climate and Environmental Studies (CCES)

Sl. No.	Title	Principal Investigator	Sponsoring Agency	Duration	Sanctioned Amount (₹)
1.	Role of Himalayan glaciers in the Ganga river system: A study based on stable Isotope.	Prof. Prasanta Sanyal	NCAOR	28.03.2018 to 27.03.2021	46,70,000.00
2.	Monitoring Nitrogen isotopes in precipitation from two urban areas(Delhi and Kolkata in India)	Dr. Sayantan Sarkar	IAEA (International Atomic Energy Agency)	25.10.2018 to 24.10.2021	12,34,000.00
3.	Estimation of evaporation loss in domestic water supply and evaluation of urbanization of hydrology: A case study from New delhi,India	Prof. Prasanta Sanyal	IAEA (International Atomic Energy Agency)	29.05.2018 to 28.05.2021	15,50,000.00
4.	Increasing Resilience to Earthquake in North India	Prof. Supriyo Mitra	The Royal Society UK	01.12.2018 to 30.11.2021	56,74,180.00



Publications

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Department of Biological Sciences

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- Bhattacharjee, Debottam, Shubhra Sau, and Anindita Bhadra. 2018. "Free-Ranging Dogs Understand Human Intentions and Adjust Their Behavioral Responses Accordingly". *Frontiers in Ecology and Evolution*. 6: 232
- Biswas, Abhijit, Kasturee Chakraborty, Chiranjit Dutta, Sanchita Mukherjee, Paramita Gayen, Somnath Jan, Argha Mario Mallick, Dhananjay Bhattacharyya, and Rituparna Sinha Roy. 2019. "Engineered Histidine-Enriched Facial Lipopeptides for Enhanced Intracellular Delivery of Functional siRNA to Triple Negative Breast Cancer Cells". *ACS Applied Materials & Interfaces*. 11 (5): 4719-4736.
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- Chakraborty, Saikat, Anindita Bhadra, Anjan K. Nandi, Sumana Annagiri, Sujata Deshpande, Shakti Lamba, Alok Bang, and Raghavendra Gadagkar. 2018. "Evolution of Reproductive Dominance in Animal Societies – Lessons From a Social Wasp". *Proceedings of the Indian National Science Academy. Part A, Physical Sciences*. 84 (3): 695-706.
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- Das A, D Roy, M Mandal, C Jaiswal, M Ta, and PK Mandal. 2018. "Carbon Dot with pH Independent Near-Unity Photoluminescence Quantum Yield in an Aqueous Medium: Electrostatics-Induced Förster Resonance Energy Transfer at Submicromolar Concentration". *The Journal of Physical Chemistry Letters*. 9 (17): 5092-5099.*
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*These papers appear in more than one Departmental Publications List because of co-authors from different departments.

Centre for Advanced Functional Materials (CAFM)

Note: Publications with any one of the authors having IISER Kolkata affiliation are also shown in Departmental publication list.

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Note: Publications with any one of the authors having IISER Kolkata affiliation are also shown in Departmental publication list.

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National Center for High Pressure Studies (NCHPS)

Note: Publications with any one of the authors having IISER Kolkata affiliation are also shown in Departmental publication list.

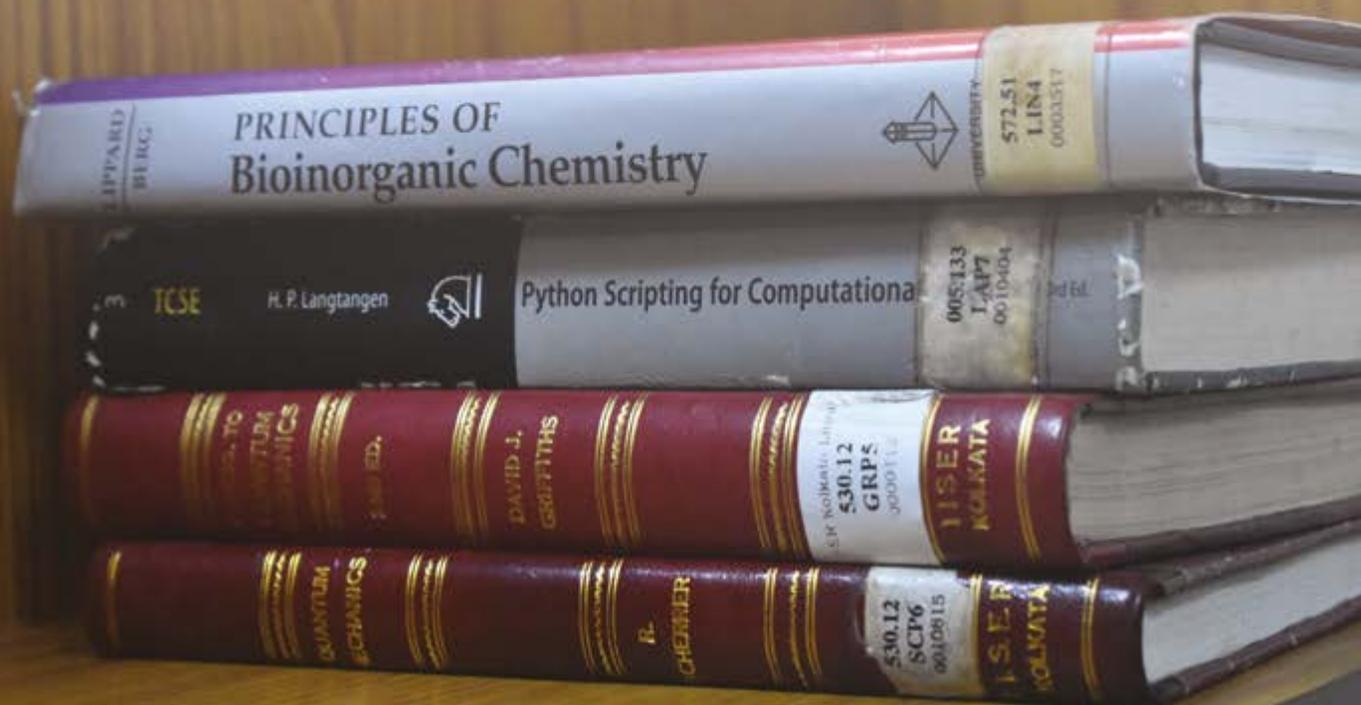
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Academic Report



Overview of Academic Activities

IISER Kolkata (IISER-K) is an autonomous institute recognized by the Government of India under the sub-section (1) of section 26 of the National Institutes of Technology Science Education and Research Act, 2007. IISER Kolkata offers the following academic programmes:

- 5-Year Dual Degree BS-MS Programme
- Integrated MS-PhD Programme
- PhD Programme
- MS in Space Physics Programme

The office of the Dean of Academic Affairs (DoAA)—the Academic Cell—takes care of all academic matters of undergraduate and postgraduate studies, from the admissions to the award of final degrees. The major activities of the Academic Cell include course formulation, periodic review of course structures, recording students' feedback and implementing decisions of the Senate.

The academic programme of IISER Kolkata stresses on a holistic development of the students, where a student obtains 'Major' in a discipline, but has enough exposure to other interdisciplinary areas. Courses on Humanities and Social Sciences are also offered to improve the communication skills and to inculcate a sense of social sensitivity.

Currently IISER Kolkata has 917 BS-MS students, 157 Integrated PhD students, 3 students under MS in Space Physics, and 351 PhD students. So far, a total of 623 BS-MS, 45 IPHD (with MS), 19 IPHD, 136 PhD, and 8 MS-by-Research students have graduated from IISER Kolkata, over six Convocations. The 7th Convocation of IISER Kolkata is scheduled to be held on 11th of June 2019.

The IISER Aptitude Test (IAT) conducted by the Joint Admissions Committee (JAC) of the IISERs for BS-MS admissions in Academic Session 2018-19 was held on Sunday, 24 June 2018. A total of 1791 candidates appeared in the 8 centres (in Kolkata, Guwahati, Patna and Siliguri) that were conducted by IISER Kolkata.

In accordance with the Government policy regarding the admission of divyang persons in educational institutions, 3% supernumerary was followed by the Joint Admissions Committee 2018 during admissions of 5 Year BS-MS Dual Degree Programme 2018-19.

IISER Kolkata has a system in place for remedial coaching and mentoring for students having poor academic performance. Counseling services are provided to those who need psychological support. Also, Persons with Disability (PD) are provided writers on request, during examination.

IISER Kolkata has a policy on international/national travel for the students. The policy aims at developing an

institutional support mechanism to encourage a limited number of outstanding students to present their research work to a wide scientific audience. Under this policy, a uniform and stringent procedure is maintained to provide full or partial travel support to selected students to attend conferences/workshops both in India and abroad.

IISER Kolkata is following a Memorandum of Understanding (MoU) with the National Securities Depository Limited (NSDL), Mumbai, under the National Academic Depository (NAD) initiative of the Government of India. As part of this MoU, IISER Kolkata has securely lodged the details of all academic certificates issued to its graduated students till date. All the degree certificates, transcripts, gold medal certificates and best thesis certificates of the graduating students in 6th Convocation were digitally signed and successfully uploaded by the Office of Academic Affairs. This has enabled the students to view and download their respective certificates. It has also enabled the external agencies to verify a student's certificate.

As per stated guidelines by the Ministry of Human Resource Development, the Office of Academic Affairs has been issuing bilingual degree certificates – in Hindi and English – to all the degree holders.

The Institute has initiated measures to implement Massive Open Online Courses (MOOC) through NPTEL (National Programme on Technology Enhanced Learning) and SWAYAM (Study of Webs of Active-Learning for Young Aspiring Minds) – an MHRD initiative.

IISER Kolkata is a participant in the "Study in India" programme launched by the MHRD, wherein it proposes to admit foreign students to the BS-MS and PhD/IPHD Programmes.

The C.N.R Rao Education Foundation gives prizes to the toppers of first two semesters under 5-Year Dual Degree BS-MS Programme. For Autumn Semester 2018, Mr. Thomas Tushar Dutta (Roll No. 18MS117) has received the same.

The following new courses have been introduced in Academic Session 2018-19

1. The entire first year syllabus was revised and incorporated from Academic Session 2018-19.
2. Spring 2019: ID 4214: Mineral Physics (ID course of the Department of Earth Sciences)

The Office of Academic Affairs, through its dynamic endeavours, has been providing support to IISER Kolkata to realize its vision to be the leading centre for research and education in basic sciences.

PhD Programme

1. A total of 113 students were admitted to the PhD Programme during Academic Session 2018-19. [August 2018 (Autumn) and January 2019 (Spring)]

a) Category and gender-wise

Gender	General	OBC	SC	ST	PD	Total
Male	44	24	14	1	0	83
Female	22	4	4	0	0	30
Total	66	28	18	1	0	113

b) Department-wise

Department of Biological Sciences	24
Department of Chemical Sciences	55
Department of Earth Sciences	11
Department of Mathematics and Statistics	4
Department of Physical Sciences	19
Total	101

2. A total of 351 students are registered in the PhD Programme as on 31 March 2019

a) Category and gender-wise

Gender	General	OBC	SC	ST	PD	Total
Male	159	53	34	3	1	250
Female	79	10	11	1	0	101
Total	238	63	45	4	1	351

b) Department-wise

Department of Biological Sciences	75
Department of Chemical Sciences	156
Department of Earth Sciences	34
Department of Mathematics and Statistics	14
Department of Physical Sciences	61
Centre of Excellence in Space Sciences	11
Total	351

c) Fellowship-wise

CESSI	4
CSIR	109
DBT	2
ICMR	4
IISER-K	82
INSPIRE	62
NBHM	1
PROJECT	8
UGC	77
UGC-RGNF	2
Total	351

I PhD Programme

1. A total of 22 students were admitted to the I PhD Programme during Academic Session 2018-19

a) Category and gender-wise

Gender	General	OBC	SC	ST	PD	Total
Male	12	1	3	0	0	16
Female	4	2	0	0	0	6
Total	16	3	3	0	0	22

b) Department-wise

Department of Biological Sciences	7
Department of Chemical Sciences	8
Department of Earth Sciences	0
Department of Mathematics and Statistics	2
Department of Physical Sciences	5
Total	22

2. A total of 158 students are registered in the I PhD Programme as on 31 March 2019

a) Category and gender-wise

Gender	General	OBC	SC	ST	PD	Total
Male	93	7	4	2	0	106
Female	46	4	1	1	0	52
Total	139	11	5	3	0	158

b) Department-wise

Department of Biological Sciences	38
Department of Chemical Sciences	55
Department of Earth Sciences	14
Department of Mathematics and Statistics	9
Department of Physical Sciences	42
Total	158

c) Fellowship-wise

CSIR	14
IISER-K	141
INSPIRE	3
Total	158

MS in Space Physics Programme

1. A total of 3 students are registered under MS in Space Physics Programme as on 31 March 2019

Category and gender-wise

Gender	General	OBC	SC	ST	PD	Total
Male	02	0	0	0	0	02
Female	01	0	0	0	0	01
Total	03	0	0	0	0	03

BS-MS Programme

1. A total of 215 students were admitted to the BS-MS Programme during Academic Session 2018-19

Category and gender-wise

Gender	General	OBC	SC	ST	PD	Total
Male	79	47	20	10	0	156
Female	29	13	9	6	2	59
Total	108	60	29	16	2	215

2. A total of 917 students are registered in the BS-MS Programme as on 31 March 2019

Category and gender-wise

Gender	General	OBC	SC	ST	PD	Total
Male	330	187	123	48	5	693
Female	105	69	28	19	3	224
Total	435	256	151	67	8	917

Students who were given Institute travel grants during 2018-19

Name	Conference	Duration
Archana Josy	Attended the General Assembly 2018 of the European Geosciences Union (EGU) in Vienna, Austria	8th to 13th April, 2018
K Srinivasa Venu Gopal	For poster Presentation at "Supr@Lyon - Supramolecular Chemistry @work" in Lyon (France)	12th to 14th December 2018
Shuvojit Paul	Attended the Optical Trapping Summer School (OTSM-2018) at the University of Gothenburg, Sweden	29th May to 1st June 2018
Bishwarup Paul	Attended the 9th European Conference on Behavioural Biology (ECBB) at Liverpool, UK	August 9th to August 12th, 2018
Sayak Ray	For poster Presentation at "Anderson Localization and Interactions" at the Max Planck Institute for the Physical of Complex Systems(MPIPKS), Dresden	24th to 28th September, 2018
Abhishek Guha	For poster Presentation at "16th conference on Translational Control" at Cold Spring Harbor Laboratory, New York, USA	4th to 8th September, 2018
Banhisikha Saha	Attended the 59th Annual Drosophila Research Conference at the Philadelphia Marriott Downtown in Philadelphia, PA	April 11th- April 15th, 2018
Santanu Pal	Attended the 6th edition of International Conference on Superconductivity and Magnetism - "ICSM2018" at Antalya, Turkey	29th April to 4th May 2018
Vijayananda Sarangi	Attended the EGU General Assembly 2018 in Vienna, Austria	8th-13th April 2018
Jashodhara Chaudhury	Attended the EGU General Assembly 2018 in Vienna, Austria	8th-13th April 2018
Dipayan Chakraborty	Attended the 3rd International Conference on Dissociative Electron Attachment in Villa Lanna, in Prague, Czech Republic	10th to 13th April 2018
Mandira Pal	Attended the SPIE Photonics Europe conference in Strasbourg, France	22nd -26th April, 2018
Rafiqul Rahaman	Attended the APS April meeting 2018 at Columbus, Ohio, USA,	14th to 17th April 2018
Smita Ghosh	Attended the Gordon Research Seminar (GRS) on Molecular Interactions and Dynamics at Stonehill College, 320 Washington Street, Easton, MA, United States	July 7th to July 13th, 2018
Debottam Bhattacharjee	Attended the 9th European Conference on Behavioural Biology (ECBB) at Liverpool, UK	August 9th to August 12th, 2018

Name	Conference	Duration
Ankita Singh	For Oral Presentation at "12th Vaccine Congress" at Budapest, Hungary	16th to 19th September 2018
Rubina Mondal	For poster Presentation at "International Conference on Ecological Sciences" at Rennes, France	22nd to 25th October 2018
Rajashree Banerjee	For poster Presentation at "Geological Society of America - Annual Meeting 2018" in Indianapolis, Indiana, USA	4th to 7th November 2018

Degree Recipients in the 6th Convocation

BS-MS Programme : 133 students

Department of Biological Sciences

Sl. No.	Roll No.	Name	Year of Completion
1	12MS014	Titli Saha	2018
2	13MS016	Prateek Kumar Sahu	2018
3	13MS018	Saptarshi Maji	2018
4	13MS020	Adyasha Tejaswi Khuntia	2018
5	13MS048	Piuli Shit	2018
6	13MS049	Olivia Debnath	2018
7	13MS056	Akshay Simha K J	2018
8	13MS073	Vineeth A R	2018
9	13MS078	Lakshmy Vasam	2018
10	13MS094	Soumyajit Dutta	2018
11	13MS106	Rounak Patra	2018
12	13MS116	Mrinmoy Pal	2018
13	13MS138	Sunil Kumar Pradhan	2018

Department of Chemical Sciences

Sl. No.	Roll No.	Name	Year of Completion
1	13MS002	Soumav Nath	2018
2	13MS003	Usha Meena	2018
3	13MS004	Joe P. Jose	2018
4	13MS005	Vishnu. V. S	2018
5	13MS006	Manikandan M	2018
6	13MS008	Arun Kumar	2018
7	13MS013	Samyadeb Mahato	2018
8	13MS014	Anu Lal	2018
9	13MS015	Rahul. K. H	2018
10	13MS017	Kasturee Nayak	2018
11	13MS031	Sumit Kumar	2018
12	13MS032	Vijayanath E	2018
13	13MS033	Santosh Kumar	2018
14	13MS034	Koppiseti Heramba Venkata Sairama Murthy	2018
15	13MS035	Nivedya. A. U	2018
16	13MS036	Anubhav Kumar	2018
17	13MS038	Elizabathe Davis	2018

Sl. No.	Roll No.	Name	Year of Completion
18	13MS042	Abhishek Kumar	2018
19	13MS045	Sruthy Baburaj	2018
20	13MS057	Amod Prakash	2018
21	13MS058	Mridhul Ram. K. R	2018
22	13MS059	Anubhab Chakraborty	2018
23	13MS063	Puranjan Chatterjee	2018
24	13MS065	Nikita Madhukar	2018
25	13MS068	Pintu Kanjilal	2018
26	13MS069	Ashik Biswas	2018
27	13MS072	Anubhav Rajpoot	2018
28	13MS079	Jaiky Kumar	2018
29	13MS086	Aswanth. V. P	2018
30	13MS087	Harsha Dixit	2018
31	13MS088	Nilesh Kumar Rout	2018
32	13MS090	Arghya Sarkar	2018
33	13MS092	Jithin Thomas	2018
34	13MS095	Abhi Bhadran	2018
35	13MS100	A Darshana Yazhini	2018
36	13MS101	Krishnaveni Ajith	2018
37	13MS112	Simran Kumari	2018
38	13MS120	Dhiman Ray	2018
39	13MS127	Anshula Mondal	2018
40	13MS135	Subhra Kanti Das	2018
41	13MS136	Ritwik Barman	2018

Department of Earth Sciences

Sl. No.	Roll No.	Name	Year of Completion
1	12MS080	Shobhana Khatun	2018
2	12MS082	Abhilash Borah	2018
3	13MS012	Abhijith. C. A	2018
4	13MS021	Diptimayee Behera	2018
5	13MS022	Padmaja. J	2018
6	13MS026	Melissa Bok Kharmujai Kharkongor	2018
7	13MS037	Archana Josy	2018
8	13MS043	Prashant Rawat	2018
9	13MS044	Ammu J K	2018
10	13MS067	Hemanta Kumar Chakladar	2018
11	13MS076	Kimi Khungree Basumatary	2018
12	13MS077	Salam Maheshwori Devi	2018
13	13MS093	Nishant Kumar	2018
14	13MS110	Shubham Sharma	2018
15	13MS115	Swarnadip Saha	2018
16	13MS142	Rupak Samadder	2018
17	13MS146	Soumya Bohidar	2018

Important Administrative Committees

Administrative Staff List

Administrative Report

Computer Centre

Library

International Relations and Outreach Report

Students' Affairs Report

Students' Achievements

Department of Mathematics and Statistics

Sl. No.	Roll No.	Name	Year of Completion
1	13MS019	Suman Das	2018
2	13MS028	Shouryya Mitra	2018
3	13MS046	Anup Singh	2018
4	13MS062	Santanil Jana	2018
5	13MS075	Sharon Robins	2018
6	13MS080	Rachita Guria	2018
7	13MS091	Timmavajjula Venkata Karthik	2018
8	13MS098	Vinay Kannaujia	2018
9	13MS109	Jishu Das	2018
10	13MS125	Shubhamoy Nandan	2018
11	13MS131	Spandan Das	2018
12	13MS134	Arnab Char	2018
13	13MS143	Sanjeet Maisnam	2018

Department of Physical Sciences

Sl. No.	Roll No.	Name	Year of Completion
1	12MS036	Modumudi Sai Madhav	2018
2	12MS084	Syed Naquab A Jaffri	2018
3	12MS109	Subham Pal	2018
4	13MS001	Ajmal	2018
5	13MS009	Angad Gupta	2018
6	13MS010	Anju A	2018
7	13MS011	Tousif Islam	2018
8	13MS024	Shashank Shubham Jha	2018
9	13MS025	Shruti J S	2018
10	13MS027	Abhijeet Kumar	2018
11	13MS030	Sayantana Majumdar	2018
12	13MS039	Prashant Srivastava	2018
13	13MS040	Umang Jain	2018
14	13MS041	Shanima S	2018
15	13MS050	Sushovan Mondal	2018
16	13MS051	Saif Ali	2018
17	13MS054	Swarnadeep Seth	2018
18	13MS055	Antariksha Das	2018
19	13MS061	Bikash Kumar Behera	2018
20	13MS064	Srijan Bharati Das	2018
21	13MS082	Subhrasmita Kar	2018
22	13MS083	Poornima Ramesh	2018
23	13MS089	Kawale Mayuri Prabhakar	2018
24	13MS096	Jitendra Kumar Singh	2018
25	13MS097	Aswathy Raj	2018
26	13MS099	Manoj Kumar	2018
27	13MS102	Komal Bhattacharyya	2018
28	13MS103	Abhirami Harilal	2018
29	13MS105	Aritra Roy	2018
30	13MS107	Suvadip Mandal	2018

Sl. No.	Roll No.	Name	Year of Completion
31	13MS111	Suman Panda	2018
32	13MS113	Mithilesh Kumar Parit	2018
33	13MS117	Randhir Kumar	2018
34	13MS118	Arpit Das	2018
35	13MS121	Sreyam Sengupta	2018
36	13MS123	Ipsika Mohanty	2018
37	13MS124	Abhishek Som	2018
38	13MS126	Sreejesh. P. S.	2018
39	13MS128	Sristy Agrawal	2018
40	13MS130	Spandan Pathak	2018
41	13MS133	Ananda Prakash Jena	2018
42	13MS137	Saikat Mondal	2018
43	13MS140	T. P. Mahesh	2018
44	13MS141	Koushik Bar	2018
45	13MS144	Srashti Goyal	2018
46	13MS145	Aaditya Panigrahi	2018
47	13MS147	Kotikalapudi V S Karthikesu	2018
48	13MS148	Adarsh. K	2018
49	13MS149	Vijay Kumar	2018

MS By Research Programme : 1 student

Department of Physical Sciences

Sl. No.	Roll No.	Name	Year of Completion
1	14MR001	Mannu Brahmi	2017

IPhD Programme (MS): 9 students

Department of Chemical Sciences

Sl. No.	Roll No.	Name	Year of Completion
1	14IP004	Hemant Rawat	2017
2	14IP018	Kakali Santra	2017
3	14IP025	Debasmita Pariari	2017
4	14IP042	Praveen Kumar Budakoti	2017

Department of Earth Sciences

Sl. No.	Roll No.	Name	Year of Completion
1	14IP006	Debanjan Chandra	2017
2	14IP008	Suraj Satpathy	2017

Department of Physical Sciences

Sl. No.	Roll No.	Name	Year of Completion
1	13IP019	Sourav Sadhukhan	2016
2	14IP007	Sourav Islam	2017
3	15IP019	Kaushlendra Kumar	2018

IPhD Programme: 10 students

Department of Biological Sciences

Sl. No.	Roll No.	Name	Supervisor	Title of Thesis	Date of Completion (MM/DD/YY)
1	10IP04	Dhiman Sankar Pal	Rupak Datta	Characterization of Leishmania major -Carbonic Anhydrase as a Potential Drug Target against Leishmaniasis	29-12-2017

Department of Chemical Sciences

Sl. No.	Roll No.	Name	Supervisor	Title of Thesis	Date of Completion (MM/DD/YY)
1	11IP22	Ankita Mitra	Balaram Mukhopadhyay	Total Synthesis of the Oligosaccharide Repeating Units Related to Bacterial O-Antigens	01-08-2017
2	11IP16	Vikramjit Sarkar	Balaram Mukhopadhyay	Chemical synthesis of biologically active oligosaccharides from bacterial origin	07-08-2017
3	11IP12	Shrabanti Das	Pradipta Purkayastha	Studies on Light Induced Dynamics of Small Molecules and Protein under Different Physiological Conditions in Lipid Nanoparticles and Vesicles	12-10-2017
4	11IP01	Preethi Thomas	Soumyajit Roy	Patterning of Soft-Oxometalates, their Formation and Applications	05-12-2017
5	11IP17	Krishnendu Maji	Debashish Halder	Peptide based Smart Materials: Structure and Application	05-01-2018

Department of Physical Sciences

Sl. No.	Roll No.	Name	Supervisor	Title of Thesis	Date of Completion (MM/DD/YY)
1	11IP18	Pamir Nag	Dhananjay Nandi	Development and application of velocity slice imaging spectrometer to study low-energy electron-molecule collisions	13-07-2017
2	10IP10	Ankan Mukherjee	Narayan Banerjee	On the Reconstruction of Dark Energy Models	22-08-2017
3	10IP11	Soumya Chakrabarti	Narayan Banerjee	Aspects of Gravitational Collapse and the formation of Spacetime Singularities	29-08-2017
4	11IP15	Anuradha Samajdar	Rajesh Kumble Nayak	Some tests of general relativity using gravitational wave observations	05-03-2018

PhD Programme: 24 students

Department of Biological Sciences

Sl. No.	Roll No.	Name	Supervisor	Title of Thesis	Date of Completion (MM/DD/YY)
1	11RS010	Rahul Basu	Jayasri Das Sarma	Mouse Hepatitis Virus induced remodeling of Gap Junction Intercellular Communication plays a major role in Demyelination	05-06-2017
2	12RS017	Manabi Paul	Anindita Bhadra	Understanding Parental Care in Free-ranging Dogs of India	18-09-2017
3	11RS014	Aresh Sahu	Mohit Prasad	Role of gap junction protein, innexin2, mediated intercellular communication in cell fate specification and epithelial morphogenesis during Drosophila oogenesis	13-10-2017
4	11RS006	Tamal Roy	Anuradha Bhat	Behavioural Variations and their ecological correlates among wild Zebrafish, Danio rerio	23-10-2017
5	11RS019	Rohitashva Shukla	Anuradha Bhat	Diversity patterns of stream fish communities from Narmada river basin, India	19-12-2017
6	10RS020	Deepika Ahuja	Partho Sarothi Ray	Investigating the Role and Regulation of RNA-binding protein HuR and microRNA miR-125b in regulating p53 mRNA translation post genotoxic stress	15-02-2018
7	12RS051	Afaq Hussain	Jayasri Das Sarma	Arsenic binding to gap junction protein connexin 43 alters cell to cell communication and tissue homeostasis	11-05-2018

Department of Chemical Sciences

Sl. No.	Roll No.	Name	Supervisor	Title of Thesis	Date of Completion (MM/DD/YY)
1	11RS031	Subharanjan Biswas	Soumyajit Roy	Study of Supramolecular Self-assembly in Oxometalates, Soft-Oxometalates and Polymer based Systems and their Applications	08-05-2017
2	11RS025	Diptesh Dey	Ashwani Kumar Tiwari	Quantum and classical dynamics for certain elementary gas-phase reactions	16-06-2017
3	13RS011	Sashi Debnath	Sanjio S. Zade	Synthesis of pi-conjugated Building Blocks: Staging in Organic Electronic Devices and their Doping Characteristics	30-06-2017
4	11RS008	Anirban Sharma	Pradip Kumar Ghorai	Structural and Dynamical properties of Guest in Nanoporous Material and of Ionic liquids	07-07-2017
5	11RS021	Arpita Paikar	Debasish Haldar	Design and Synthesis of Peptide Based Nano - Structure Materials	22-08-2017
6	12RS045	Binoy Maity	Priyadarsi De	Fatty Acid Derived Polymeric Materials via Controlled Radical Polymerization Technique	25-09-2017
7	10RS006	Sudipta Bhattacharyya	Arindam Mukherjee	Nitrogen based heterocycles and their metal complexes: From anticancer to anti-dyslipidemic agents	10-11-2017
8	11RS026	Saikat Mukherjee	Raja Shunmugam	Norbornene based copolymer for theranostic application in cancer therapy	12-02-2018
9	12RS037	Tuhin Samanta	Venkataramanan Mahalingam	Sensitization of Lanthanide (Ln ³⁺) ion Luminescence in Ln ³⁺ -Doped Nanomaterials	20-02-2018
10	11RS004	Chiranjit Dutta	Rituparna Sinha Roy	Nature-Inspired Designed Nanostructured Peptides as Molecular Transporters	13-04-2018
11	11RS030	Gonela Vijaykumar	Swadhin Mandal	Development of Nickel Catalysts for Homogeneous Catalysis	28-05-2018

Department of Earth Sciences

Sl. No.	Roll No.	Name	Supervisor	Title of Thesis	Date of Completion (MM/DD/YY)
1	12RS016	Deepjay Sarkar	Devapriya Chattopadhyay	Nature of marine bivalve distribution along Indian coast and its environmental correlates	05-09-2017

Department of Mathematics and Statistics

Sl. No.	Roll No.	Name	Supervisor	Title of Thesis	Date of Completion (MM/DD/YY)
1	11RS002	Krishanu Deyasi	Anirban Banerjee	Analysing the Structure of Biological and other Networks	05-07-2017

Department of Physical Sciences

Sl. No.	Roll No.	Name	Supervisor	Title of Thesis	Date of Completion (MM/DD/YY)
1	12RS055	Biswarup Ash	Amit Ghosal	Thermal melting of Two-Dimensional Coulomb clusters	16-04-2018
2	11RS009	Gopal Chandra Sardar	Golam Mortuza Hossain	Aspects of polymer quantization of scalar matter field	18-04-2018
3	11RS040	Sourabh Singh	Chiranjib Mitra	Study of surface to bulk coupling and Coulomb interaction in Topological Insulator thin films	15-05-2018
4	14RS023	Dhrubajyoti Mandal	Soumitro Banerjee	Dynamics of Piecewise Smooth Maps with Periodic and Stochastic Variation in the Functional Form	22-05-2018

Best MS Thesis Award Recipients in the 6th Convocation

Sl.	Department	Best		Second Best	
		Roll No	Name	Roll No	Name
1	Biological Sciences	13MS049	Olivia Debnath	13MS094	Soumyajit Dutta
				13MS020	Adyasha Tejaswi Khuntia
2	Chemical Sciences	13MS120	Dhiman Ray	-	-
		13MS135	Subhra Kanti Das		
3	Earth Sciences	13MS110	Shubham Sharma	13MS037	Archana Josy
4	Mathematics & Statistics	13MS134	Arnab Char	-	-
		13MS125	Shubhamoy Nandan		
5	Physical Sciences	13MS011	Tousif Islam	13MS064	Srijan Bharati Das
		13MS055	Antariksha Das		

Medal Recipients in the 6th Convocation

Sl. No.	Roll No.	Name	Name of Medal	Category, Department
1	13MS116	Mrinmoy Pal	Director's Gold Medal	1st Rank, Biological Sciences
2	13MS120	Dhiman Ray	Director's Gold Medal	1st Rank, Chemical Sciences
3	13MS146	Soumya Bohidar	Director's Gold Medal	1st Rank, Earth Sciences
4	13MS062	Santanil Jana	Director's Gold Medal	1st Rank, Mathematics and Statistics
5	13MS064	Srijan Bharati Das	Director's Gold Medal	1st Rank, Physical Sciences
6	13MS116	Mrinmoy Pal	Director's Gold Medal	Overall Excellence
7	13MS064	Srijan Bharati Das	Director's Gold Medal	Overall Excellence
8	13MS120	Dhiman Ray	Director's Gold Medal	For Securing Highest CGPA

Members of the Office of Academic Affairs :

Prof. Soumitro Banerjee

Dean of Academic Affairs

Dr. Sushmita Bhattacharjee

Assistant Registrar, Academics

Section of Under Graduate Studies:

Ms. Saberi Sen

Office Superintendent

Mr. Zeeshan Akhtar

Junior Assistant

Section of Post Graduate Studies:

Dr. Surashree Dutta

Junior Translator (O.L.)

Mr. Arun Dutta

Junior Assistant

Students' Achievements



Students' Achievements

Ms. Sangeeta Majumdar and Mr. Sayan Dutta

Research Scholars from Dept. of Chemical Sciences have received the best poster prizes in the 16th Theoretical Chemistry Symposium (TCS) 2019, held at BITS Pilani.

Ms. Sangeeta Majumdar's Poster Title: "Effect of Spatial Confinement on the Electronic Structure of Atoms: A Density Functional Theoretical Study"

Mr. Sayan Dutta's Poster Title: "Donor-Acceptor Interactions in Early Transition Metal Halides and Group 14 Compounds: A Theoretical Insight"

Ms. Pousali Mukherjee, 14MS batch

Student from Dept. of Earth Sciences was selected for Poster Presentation titled "Investigation of the Lithospheric Structure of the Archean cratons of Gondwanaland- Insights from South India and Western Australia" at the 55th Annual Convention of Indian Geophysical Union (IGU) held at Rabindranath Tagore University, Bhopal, Madhya Pradesh during December 4-7, 2018.

Ms. Avyarthana Ghosh

Times of India Pune edition features the contribution of Avyarthana Ghosh, CESSI PhD Student, in the development of the Solar Ultraviolet Imaging Telescope payload for the Aditya Space Mission.

Mr. Himanshu Agrawal (15MS), Mr. Riddhi Mandal (14MS), Mr. Rahul Samrat (14MS), Mr. Chirantan Parui (13IP)

Himanshu Agrawal (15MS), Riddhi Mandal (14MS), Rahul Samrat (14MS), and Chirantan Parui (13IP) of Dept. of Earth Sciences have got Roland Schlich Early Career Scientist's Travel Award for their submitted abstracts in The European Geoscience Union (EGU) General Assembly 2019. The General Assembly 2019 will take place at the Austria Center Vienna (ACV) in Vienna, Austria, during 7-12 April 2019.

Mr. Abhishek Bose of 13IP

Mr. Abhishek Bose of 13IP, a senior research fellow from Prof. Jayasri Das Sarma's group had received CSIR travel award to attend and present poster titled "Mouse Hepatitis Virus restricts ERp29 mediated chaperonin pathways of gap junction protein Connexin 43 trafficking and assembly" at the prestigious ASCB-EMBO 2018 meeting (American Society for Cell Biology and European Molecular Biology Organization) at San Diego, USA, December 8-12.

Ms. Prantika Bhowmik of 13RS

Ms. Prantika Bhowmik of 13RS and her guide Prof. Dr. Dibyendu Nandy from CESSI, for their publication in Nature Communication, This was also reported in several news papers. Link for the same is <https://www.nature.com/articles/s41467-018-07690-0>. Their work dealt with "Prediction of the strength and timing of sunspot cycle 25 reveal decadal-scale space environmental conditions".

Mr. Shubham Sharma of 13MS

Mr. Shubham Sharma of 13MS and his guide Prof. Dr. Supriyo Mitra from Computational Seismology lab, for their publication JGR solid earth on 5 dec. 2018. It is titled "Seismic Attenuation of the Eastern Himalayan and Indo-Burman Plate Boundary Systems, Northeast India". Link for the same is <https://doi.org/10.1029/2018JB016496>.

Mr. Sourodip Sengupta of 14IP

Has been awarded "Suttee Nag Prize" for the Best Paper Presented in the Poster Category at the recently held International Conference on Neuroscience & XXXVI Annual Meeting of Indian Academy of Neurosciences Theme: Translational Research in Improving Mental Health from October 29 - 31, 2018 at BHU, Varanasi.

Mr. Manmeet Singh (13RS) of DBS

Received travel grant attend and present a poster titled “Fusiogenic property of virus determines the mechanistic aspects of axonal loss concurrent with demyelination” at 34Th CONGRESS OF ECTRIMS (European Committee for Treatment and Research in Multiple Sclerosis) Berlin, Germany, 10 - 12 October 2018.

Ms. Lucky Sarkar, 5th year IPhD

Participated and bagged “Third best Oral Presentation award” in the category of “Young Scientist” at the Third “International Conference on Nutraceuticals and Chronic Diseases” (INCD-2018). It was jointly organized by Swami Rama Himalayan University (Dehradun, India), International Society of Nutraceuticals & Chronic Diseases and University of Tennessee Health Science Center (USA), in Dehradun, India, from 14th-16th September, 2018. The title of her work was ‘Neem bark extract impairs mouse hepatitis virus infectivity and protects 57BL/6mice from neuroinflammatory damage’

Mr. Avijit kundu (15RS) of DPS

Won “Best Poster Award” in recently held OSI International Symposium of Optics (OSI-ISO 2018) held in conjunction with XLII Annual meeting of Optical Society of India at IIT Kanpur during 19-22 September, 2018.

Mr. Debapriya Pal (14MS) of DPS

Bagged “2nd Best Oral Talk Award” in recently held OSI International Symposium of Optics (OSI-ISO 2018) held in conjunction with XLII Annual meeting of Optical Society of India at IIT Kanpur during 19-22 September, 2018.

Mr. Avigyan Chatterjee (14MS) DES

Selected to receive a student travel grant to attend the 2018 American Geophysical Union (AGU) fall meeting scheduled during 10-14 December, 2018 at Washington, D.C., USA

Mr. Debmalya Basak (15MS) DMS

Bagged a place at Hilbert-Bernays Summer School 2018, organised by Georg-August Universitat Gottingen, Germany

Ms. Geeta Goyal (16MS)

Monash University, Malaysia Published Article on Ms. Geeta Goyal of DCS

Shubham Chandel (14RS) and Sudipta Saha (12 IP)

Selected for Best Paper Award in the International Conference on “Photonics Europe” held in Strasbourg, France between 22-26 April 2018

Ashwani Kumar (2017 MS pass out, Chemistry Major), currently working in a project in our institute

Qualified in the Prime Minister’s Research Fellowship (PMRF) Scheme. Apart from this this achievement Ashwani has already shown tremendous research capabilities and published his MS thesis work in a reputed journal of American Chemical Society along with other papers as co-author.

Debapriya Pal, 4th Year DPS, SPIE IISER Kolkata Chapter f

Awarded the prestigious SPIE Optics and Photonics Education Scholarship 2018 in the amount of \$4,000

Rahul Kumar, Meiraba Chirom Meitei, 4th Year BS-MS, DCS

Selected for NTU-India connect program at Nanyang Technology University Singapore (world ranking 11)

🏆 Madhura Bhattacharjee, IPhD student of DES

Selected for Analytical Paleobiology summer course to be held at Florida Museum of Natural History, Gainesville, USA

🏆 Abhinava Chatterjee, 4th year BS-MS student of DPS

Accepted to "Princeton University's International Student Internship Program (ISIP)" for the summer of 2018.

🏆 Adipta Pal, Ujan Chakraborty, Sounak Mukherjee, students of 15MS batch

Selected under DAAD WISE (The German Academic Exchange Service for Working Internships in Science and Engineering) program to carry out summer internships in Germany.

🏆 Rakesh Sahoo (14MS114,DCS), Ashwin Chaturvedi(14MS118,DCS)

Mitacs Globalink Research Internship Award 2018

🏆 Avinash Sethi, DBS, PhD Student, Subhrasmita Kar, DPS, BS-MS Student, Ananda Prakash Jena, DPS, BS-MS Student

Congratulations to Selected Students in ITC Infotech Campus Placement

🏆 Ritesh Kumar Panda (DES 16IP013)

Selected for SN Bose Scholar's Program 2018

IISER Kolkata iGEM 2018 Team receives grant from Department of Biotechnology to participate in the iGEM 2018 (International Competition)

- 🏆 Rajalakshmi Saha 15MS129
- 🏆 Madhavi Andhari 15MS135
- 🏆 Ankit Amrutkar 15MS033
- 🏆 Pallab Datta 15MS089
- 🏆 Hrishika Rai 16MS113
- 🏆 Paresh P. Rana 16MS055
- 🏆 Souvik Ghosh 16MS050
- 🏆 Diptatanu Das 17MS004
- 🏆 Anmol Kumar 17MS028
- 🏆 Animish Nilesh Vaze 15MS034



Sudents' Affairs Report

Overview

The Students' Affairs Office at IISER Kolkata is committed to the holistic development of students, providing general wellbeing to the students of IISER Kolkata and also providing programs and services that empower students to realize their educational goals and personal potential. Our mission also seeks to provide a healthy learning environment for all categories of students, by building and having a special relationship with them. This we do by looking into all aspects of their activities both within and outside the campus.

Towards the accomplishment of our vision and mission enunciated above, we strategize to ensure the enhancement of the overall quality of student life in and out of campus through the implementation of the broad objectives of the Institute as it relates to the Students' Affairs Section.

The Student Affairs Section also supervises the activities of the Students' leadership on campus known as Students Affairs Council (SAC). The students body is saddled with the responsibility of organizing social and intellectual programs for various science and cultural events, Annual Day, Hall Day, National Day Celebrations, International Day of Yoga 2018, Swachh Bharat Abhiyan, Ek Bharat Shrestha Bharat (EBSB) Inter IISER Cultural Meet, Inter IISER Sports Meet, etc. and most importantly liaison with the Institute administration to raise and resolve student related issues. The Office of the Dean is responsible for overseeing the operations of the Students Affairs Council.

Goals of Students' Activities at IISER Kolkata:

- Committed for holistic students development
- Immense students engagement in co-curricular activities
- Create environment for personal professional and social growth
- provide timely accurate and consistently accessible service
- Infuse student affairs values and philosophy

Our major activities and initiatives include the followings:

Inquivesta:

"Inquivesta is the annual science, social and cultural festival of IISER Kolkata. This edition, Inquivesta 9 was held from 8th to 10th March, 2019. This has reached new milestones, which featured a live concert by the renowned band, Nalayak & Standup Comedy show by famous comedian Zakir Khan. This edition of Inquivesta had a total of about 1500 participants, which saw a substantial increment of participation outside IISER. and mainly included participation from IIT Kalyani, IEST Shibpur, ISI Kolkata, Jadavpur University, Presidency College, ISERC Visva Bharati and many other colleges and schools, from in and outside West Bengal, which included cities like Chennai, Delhi, and Mumbai. The other facets of the fest happen to be the events (the old ones and the new) and workshops, with the introduction of some new events, such as Cynosure - An open mic concert, Soul beat (Dance competition), Futsal and a few others.



Live concert by the renowned band 'Nalayak'



Standup Comedy show by famous comedian Zakir Khan

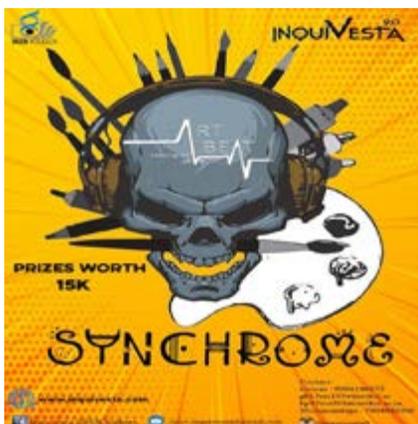
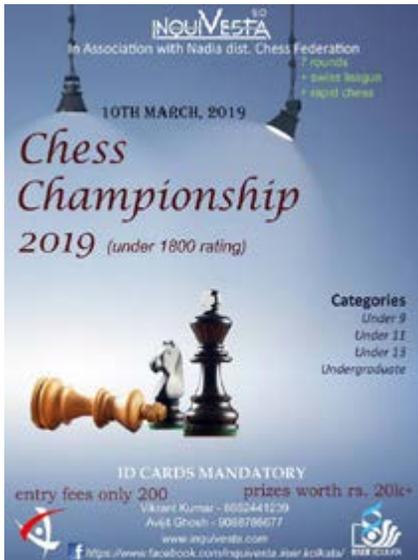


A workshop on Machine Learning by "Kolkata Lead, Face book Developers Circle", "Top 100 Innovators", "Top 50 Indian Innovators" - Sabyasachi Mukherjee

It also featured a talk and a Machine learning workshop by Sabyasachi Mukhopadhy from Face book Developer circle of Kolkata, a talk by Prof. Ashok K Ganguli from IIT Delhi and Dr, Amit Basak from IIT Kharagpur and similar other talks and workshops. These events, workshops, talks along with the art and music and various craft and food stalls make this fest more than just a Science Fest. The positive vibe during the fest was clearly evident from the excellent remarks and feedbacks that were given by the participants during the fest. Inquivesta is clearly expanding steadily each year and the next edition, unquestionably, will be better in every way.”



Inquivesta is proud to present GUEST LECTURES on 8th March by these 3 eminent professors!”



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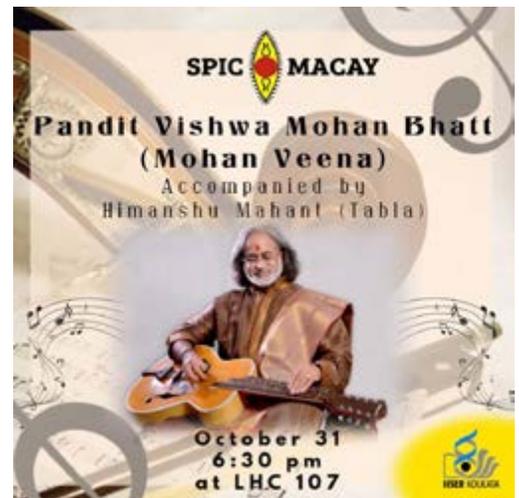
'Scrapage'- Live Music Event of the Music Club-2019 and 'Come Together'- A Promotional Jam Event for Inquistesta



PHOTON 2019 – Organized by PIXEL, the Photography Club, IISER Kolkata

Spic Macay

SPICMACAY IISER Kolkata Chapter hosted the West Bengal State Convention at IISER Kolkata from 25th -27th January, 2019. There was a plethora of cultural events including concerts by maestros, movie screenings and craft workshops. Classical Music Programme by renowned Santoor Artist Pandit Tarun Bhattacharya in association with SPIC MACAY IISER Kolkata was held on 10th April 2018 and the student members of IISER Kolkata under SAC Cultural also organized a musical programme of Shri Sahin Patwardhan, a prominent Sarodist and a disciple of Sarod Maestro Padma Vibhushan Ud. Amjad Ali Khan Saheb on 13th April, 2018. SPICMACAY IISER Kolkata Chapter organized a classical musical programme by renowned Mohan Veena Artist Pandit Vishwa Mohan Bhatt on 31st October 2018 and Sarod Maestro Pandit Tejendra Narayan Majumdar on 3rd November 2018 in IISER Kolkata.



Smarane Rabindranath:

The Students' Activity Council has inspired a tradition to celebrate the life and works of Rabindranath Tagore on his death anniversary every year. Last year's celebration on 7th August 2018 was grand indeed. We had the pleasure of hosting former members of Mohiner Ghorauli, who came together for a musical titled, "Crisis of Civilization – A Journey with Tagore", performed by Mr. Ranjon Ghoshal and his theatrical team "Forum Three". They were accompanied by a chamber orchestra led by maestro Abraham Mazumdar. Mr. Pradip Chattopadhyay introduced the theme of the play, through a soundscape. The programme also received media attention from Ebel News and SITI Channels.

On 8th August, 2018, IISER Kolkata Students Community also hosted "NrityaNeer" a group of artists who identify themselves as a part of the LGBTQ community, to stage "Chitrangada: The Creation of Divine". The show is based on the dance drama Chitrangada, a story about the identity crisis of a warrior princess when she falls in love and the realization that beauty lies within. 'NrityaNeer' portrayed the very same crises that LGBTQ community feels every day through this work of one of the greatest Indian poets, Rabindranath Tagore. A few members of our community including Director of IISER Kolkata performed to show gratitude to the great poet.

'Smarane Rabindranath' was organised by the Students Community with the association of Students Affairs Section, turned out to be the most successful programme in the history of IISER Kolkata with maximum students and faculty turning up as audience.

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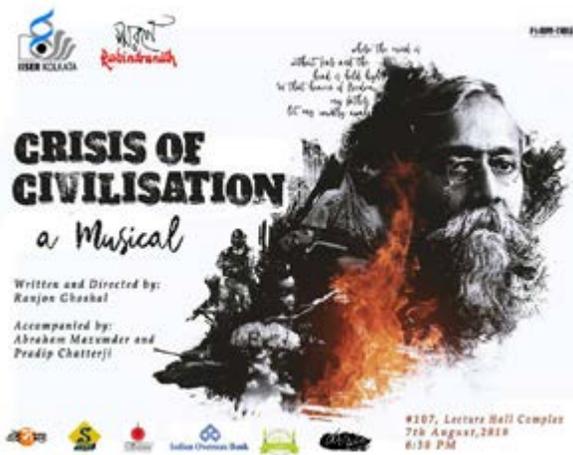
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ON 8TH AUGUST, 2018

◆ In-house programme by the students of IISER-Kolkata
◆ Time: 5:45PM
◆ Venue: LHC 107

◆ Dance-Drama Chitrangada by the dance troop "NrityaNeer"
◆ Time: 7:00PM
◆ Venue: LHC 107

YOU ARE CORDIALLY INVITED TO ATTEND THE SHOW.

**CHITRANGADA
THE CREATION OF DIVINE**

Love is the purity of heart and soul, a way to find solace in another person. Finding love is a journey to find the mirror on the wall that shows you who you really are!

'Chitrangada' is a love story. The story is knitted in music that touches the soul and is expressed in dance forms that banners in ways beyond imagination! One of Tagore's most famous dance dramas, this story tells you the fight of a princess, who saw no difference between a prince and herself! She was masculine in appearance. The prajyas of Manipal could see the caring nature of a mother in her as well as the bold valiant nature of a king. She had out of the ordinary expertise in archery and sovereignty and was very fond of hunting.

This is a story set in the times of Mahabharata. It involves the Pandava prince Arjun, to whom our princess falls in love. She tried her best to stay in love, even tried changing her appearance, to ignite the same passion in Arjun that she feels for him.

Love should make you realize that you are beautiful, inside out. But in the case of our princess it made her small, she lost her identity to herself because of the social constructs that makes us think that appearances matter more than your true 'self'!

This is the same identity crisis that a part of our community, who identify themselves as LGBTQ goes through, everyday! 'NrityaNeer' is an LGBTQ oriented dance-troop. Some of them are the ex-students of Virva-Bharati and Rabindranath University. Today they will lead us to discover how our princess will regain her identity, that she is none less than 'CHITRANGADA'. The Princess!

Rabindranath Tagore has always been the speech of many speechless. Currently we are standing at a juncture of time where every so-called social identity seems like a social construct. Thankfully, the progressive ways of thinking are finally changing. The Supreme Court's decision to examine the constitutional validity of IPC section 377 which criminalise homosexuality is the slightest ray of hope in the darkest horizon. This fight to achieve the fundamental rights of LGBTQ will find its way to a society where free will dominates only through constant awareness and vigilance.

IISER Kolkata is taking a tiny step towards that future. Thank you for being a part of it.

#SUPPORT_LGBTQ
#EXPECT_SOMETHING_DIFFERENT

International Yoga Day Celebration (21st June 2019)

As per MHRD mandate IISER Kolkata has observed three weeks yoga programme for the celebration of International Day of Yoga 2018. Keeping in mind the importance of the programme and enhance the active participation for the same, the institute has invited a yoga team from the World Yoga Society. Students, teaching and non-teaching staff members and their family also participated in the session like Therapeutic Yoga, Stress management- lecture on benefits of yoga, poster presentation, and quiz, etc. under the guidance of Shri Asim Kumar Das, EX-Professor of World Yoga Society and his team.



4th International Yoga Day Celebration 2018 held on 21st June

Independence Day Celebration:

The 72nd Independence Day of the Nation was celebrated in the Institute on 15th August 2018. The programme was started with flag hoisting ceremony and 'Independence Quiz' was organised by Literary Club on the Independence of our country. The students also conducted a cultural program and a movie (Rang de Basanti) screening by the Movie Club of IISER Kolkata.



Teachers' Day Celebration:

Like every year, the students of BS-MS 2nd year organised a cultural evening to pay respect to the teachers on September 5, 2018.

Agomoni 2018

The second edition of 'Agomoni 2018' was organized during 4th October-9th October 2018. Agomoni Art Exhibition and Agomoni Umbrella Painting Workshop were organized in collaboration with Pidilite Industries Ltd. and Arts Club IISER Kolkata. Since this was the first of its kind of workshop and such initiative was not only project our ideas of nurturing hidden artistic skills of our students but also encouraged them to take part in similar workshops in future. Agomoni Lunch was organized in the Students' Monitored Canteen. Around 1000 people turned up for the event. No event can come to a completion without a cultural event. Agomoni is no different and the students showcased their skills and enthusiasm at exquisite games like Hari Bhanga, Sankh Bajano and Dhak Bajano Competitions.



Inter IISER Sports Meet 2018

Inter IISER Sports Meet (IISM), is the annual sports meet for the institutes of basic sciences in India. It was started in 2012 when IISER Kolkata organized first edition of IISM and the fifth edition of IISM was also successfully hosted by IISER Kolkata. The seventh Inter IISER Sports Meet was held in NISER Bhubaneswar during 15-20 December, 2018 and IISER Kolkata hold the third position in the IISM 2018. There were 149 students (Boys:116 & Girls:33) from IISER Kolkata participated in the various events. Initially only IISERs were part of it. NISER, IISc and Center for Excellence in Basic Sciences, Bombay (CEBS) also becomes the part IISM in its later versions. This year altogether ten



teams participated including IISER Kolkata. IISER Bhopal won the overall championship trophy. Although stood at the third position, IISER Kolkata contingent bagged four gold medals in Table Tennis (Girls), Basketball (Boys), Kabaddi (Boys), Football (Girls), two silver medals in Kho-kho (Girls) and Table Tennis (Boys) and two bronze in Javelin (Men) and Shot Put (Men). In individual events of Athletics, IISER Kolkata students bagged two gold medals, two silver medals and two bronze medals in Javelin (Men and Women), 100m Run (Men) and 200m Run (Women), Javelin (Men) and Shot Put (Men). IISER Kolkata contingent was declared second runner up and won bronze medal in overall position.



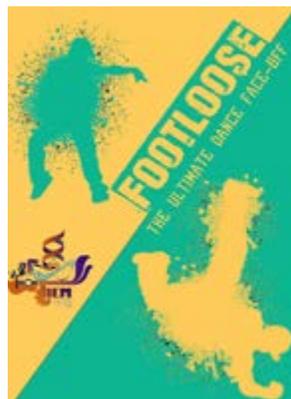
Inter-IISER Cultural Meet

IISER Kolkata hosted the first ever Inter-IISER Cultural Meet, IICM during 21st-23rd December, 2018. This was a cultural fest-cum-competition amongst the leading research institutes across the country, was held at its main campus in Mohanpur, Kalyani, during December 2018. In this grand event, approximately 500 students from seven different IISERs (Kolkata, Pune, Mohali, Thiruvananthapuram, Bhopal, Tirupati and Berhampur) and IISc Bangalore represented their respective institutes in several competitions on arts, music, dance, theatre, filmmaking, literature, and photography spread over a span of three days (21-23 December 2018). IISER Kolkata took the initiative to host the first IICM with the vision of promoting and unifying the young talents of this diversified country. The event list of IICM covers a wide spectrum of cultural activities. It enlists 'Dvaita', a solo/duet music competition on the theme 'Give peace a chance'; 'Battle of Balindi' the band competition; 'Footloose', the dance face-off and 'Twist in the Tale',



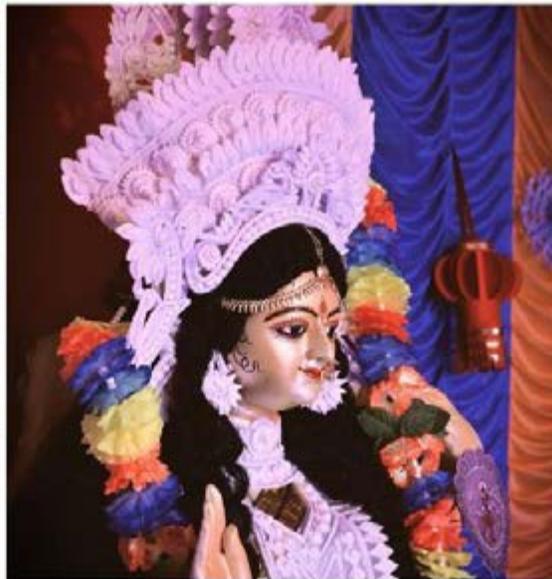
a theme-based group dance competition. 'Sand Art' and 'Fashionista: the costume designing event' are the two competitions designed to challenge creative minds to find expression through art and craft; 'J-A-M', 'The Spanish-In-Quiz-Ition' (The general inter-IISER quiz) and 'Rationale: The debate' are the competitive literary events to be held during IICM. Apart from these, there was 'Rangmanch', the drama competition and a few non-competitive events like 'Come Together', a musical jamming session and a poetry slam, where all participants of IICM were allowed to take part. The short filmmaking competition 'Chalachitra' was an online competition where the participating institutes have submitted their entries beforehand and the films was shown and judged during IICM. The photography events, 'Capture the Moment' and 'Stories in Clicks' were also online, the best photographs was auctioned during IICM through an exhibition.

IISER Kolkata invited Baul Samrat Purnadas Baul who was the Chief Guest in the inaugural session of IICM-2018 on 21st December and national award-winning singer and music director Anupam Roy graced the valedictory of this nationwide cultural fest on 23rd December. Famous quiz master Thejaswi Udupa hosted the 'Spanish-In-Quiz-Ition' on 22nd December, the quizzing event of IICM. Students from local colleges in Kolkata and Kalyani were invited to attend this grand fest along with the two special performances at the IISER Kolkata main campus. This would give them the opportunity to mingle with students from across the nation as well as to be a part of this cultural extravaganza.



Ek Bharat Shrestha Bharat (EBSB)

IISER Kolkata student affairs organized multiple events under the theme of Ek Bharat Shreshtha Bharat this year. Instead of organizing one special event for such theme Student Affairs Council had decided to organize multiple such events looking at particular occasion during 2018-19. Student affairs council (SAC) of IISER Kolkata under guidance of Students Affairs Section in collaboration with various clubs representing particular art forms organized various activities in above mentioned period which included General quiz, poster making also the theme was incorporated into the regular public speaking sessions organized by Literary club of IISER Kolkata. Some major events like Makar Sankranti, Basant Panchami, Utkal Divas and etc. had been organized by students' body of the institute which had major implications on the cultural integration. Some other events in which theme was incorporated –like Quiz session on the cultural aspects of the India, regular public speaking sessions organized by Literary Club, screenings of movies in various language of the India like Hindi, Marathi, Bengali, Telugu and documentaries. IISER Kolkata Students under guidance of Students Affairs Section organizes such programs throughout the year which promotes cultural integration and sense of unity in students from the various parts of the country.



Voluntary Blood Donation Camp:

Students' community of IISER Kolkata took initiative for conducting a voluntary blood donation camp at the Institute Campus on 29th March 2019 with the help of Association of Voluntary Blood Donors (AVBD), West Bengal and under supervision of the Dean of Students Affairs Section. This noble initiative will be continued every year with the intension of contributing for the social benefit of those in need of blood.



Students Activity Centre (SAC)

The essence of the success story of any educational institute lies in the success of its students. An enthusiastic student fraternity coupled with an able student administration forms the base for scaling great heights. We at the Student Affairs Council of IISER-Kolkata look to channelize the energy and vigour of our student community and give voice to their opinion. Our vision is to set up a student administration system, guided by the principles laid down in the Constitution of SAC, which will serve as the one stop for all student activities in the institute. It is our endeavour to faithfully represent the best interests of the student community and strive to create a vibrant atmosphere which will give rise to not only better academicians but also to better, well-rounded personalities.

Major Initiatives are

Alumni Card:

IISER Kolkata has taken initiatives to issue alumni card will be issuing Alumni Card to our entire pass out students. We shall start issuing the card to all the outgoing students/ students receiving degree in 7th convocation this year. As an alumna of IISER Kolkata and a member of the Alumni Association can use this card to enjoy the privileges offered by the Institute such as Special rate for the guest house both in Salt-lake and Institute, while in the campus, IISER Kolkata alumni members may avail all the services offered by the library except the circulation facility. IISER Kolkata Alumni and their spouse and children (below 18 years) will be eligible to use various facilities like Swimming Pool | Fitness | Badminton | Tennis while they will be in the campus and any other facilities will as it will be decided by the Institute time to time.

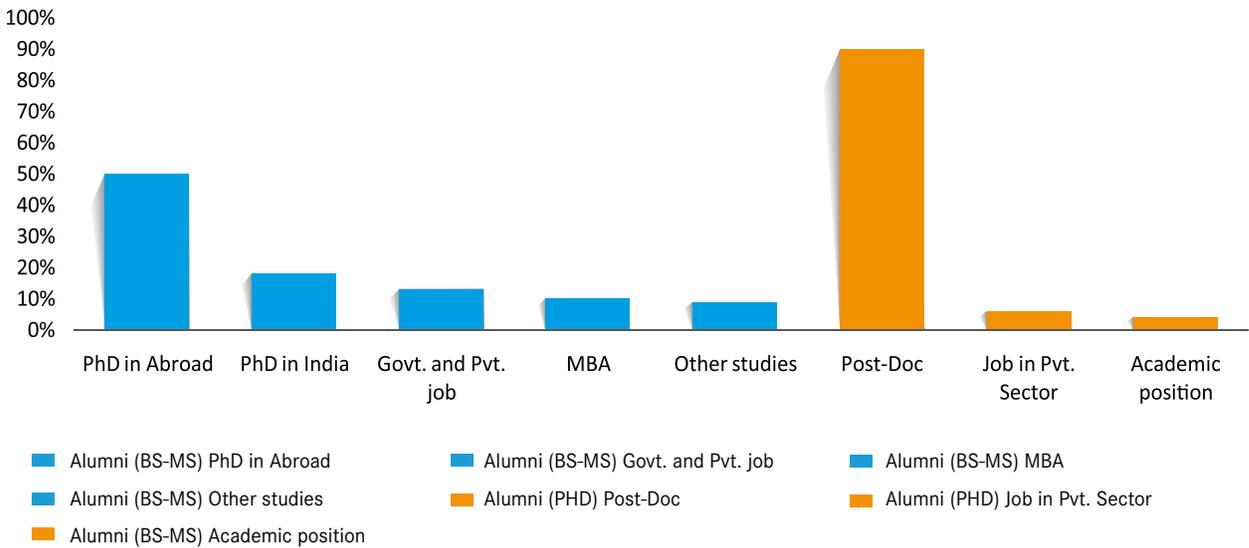
Registration of the IISER Kolkata Alumni Cell :

The organization shall be referred to as "The Alumni Association of Indian Institute of Science Education and Research, Kolkata" (AA of IISER-K). The body is being established under the policies of IISER, Kolkata.

Objectives

- Contribute towards the growth of IISER-Kolkata and the community at large by volunteering time, talent and finance
- Promote aid towards growth and progress of IISER, Kolkata.
- Build a strong IISER, Kolkata Alumni network across the world to achieve the goals.
- Promote interactions among the alumni and current students of IISER, Kolkata.

IISER Alumini Information



Alumni (BS-MS)					Alumni (PHD)		
PhD in Abroad	PhD in India	Govt. and Pvt. job	MBA	Other studies	Post-Doc	Job in Pvt. Sector	Academic position
50%	18%	13%	10%	9%	90%	6%	4%

- 1) Alumni meet was held on 4th and 5th January 2019
- 2) Alumni lecture was delivered by Alumni Association president Ms.Sonali Mohapatra (Batch MS09)
- 3) Students committee has been formed to help alumni association to organize the programs



Excellence of Alumni members in Academics

PhD Alumni members



Dr. Arup Mukherjee
Asst. Prof., IIT Bhilai



Dr. Barun Majumder
Asst. Prof., IIT Gandhinagar



Dr. Poulami Jana
Inspire faculty, Visva
Bharati



Dr. Devanita Ghosh
Inspire faculty, IISc



Dr. Anup Ghosh
Inspire Faculty, SN
Bose



Dr. Soumyajit Ghosh
Asst. Prof., SRM University



Dr. Arnab Maity,
Asst. Prof., Akal University



Dr. S. Syed Jaffer,
Asst. Prof., CIT, Coimbatore

Post-doc Alumni members



Dr. Sudipta Raha Roy
Asst. Prof., IIT Delhi



Dr. Anand Pariyar
Asst. Prof. Central
University, Sikkim



Dr. Arunabha Thakur
Asst. Prof., Jadavpur
University



Om Prakash Kaptan
Asst. Prof., Sikkim
University

BS-MS Alumni members

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Excellence of Alumni members in Industry

PhD Alumni members



Dr. Santanu Mandal
Asst. Manager,
TCG Life Sciences



Dr. Ramesh Devarapalli
Asst. Manager,
Cipla Pvt. Ltd.



Dr. Subhankar Santra
R&D Executive,
TechnoWaxChem Pvt. Ltd.



Dr. Tamal K Sen
Senior Scientist,
Halliburton Technology Pvt.
Ltd.



Dr. Amrita Sarkar,
Asst. Manager,
Mylan Laboratories
Limited.



Dr. Mintu Debnath
Scientist,
CUMI, Chennai



Dr. Sunanda Biswas
Senior Scientist
Wacker

BS-MS Alumni members



Arghya Modak
Research Scientist
Immunocore



Suraj Ranjan Prasanjit
Manager
Odisha Mining Corporation

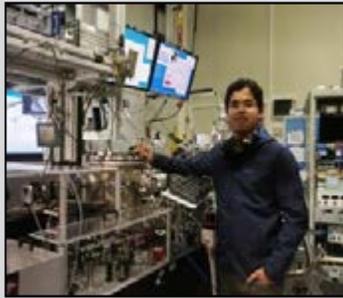
Entrepreneur



Avinash Kumar Gupta
Director
Kynoid Robotic Services Private Limited

Alumni

Indian scientist discovers revolutionary technique, makes computer one million times faster



MANISH GARG (BATCH 2007)

Manish and his team worked tirelessly for years, at the Max Planck Institute of Quantum Optics in Garching, Germany, discovered a technique which can boost up the speed of computers worldwide by 1,000,000 times. His discovery will not only reshape the future of computer once and for all, but also works, which depend on the intelligent machine, could get million times faster.

How many of you know that a list of 1,000 scientists from all over the world was recently released. Unfortunately, only 3 Indian scientists managed to secure a place in the rankings. The scenario is indeed piteous for the country, however the question being raised is- why our country is very poor in the area of science? Well, there might be a variety of reasons. A major reason is overlooking the contributions of our scientists and researchers. Most of the kids at the age of 10 or more can name at least 20 movie actors with ease, but they can hardly name 3 Indian scientists, if asked. In a way, we discourage scientific atmosphere in our society. In the article, I will tell you the story of a young Indian scientist- Manish Garg- whose work is likely to be a breakthrough in computer world. But Indian media has apparently failed to give coverage to the story. On the other hand, World's biggest science magazine has featured our hero in their edition.



Alumni Awards



Alumni lecture



Alumni president address



Career Development Cell:

Institute has planned to take an initiative to start a dedicated career development cell which will be committed to assigning this/our students with career planning, exploration, graduate scholar advising, job search strategies in-campus, interview for full time employment, internship etc. A placement modality keeping in mind the mandate of IISERs, where all the above functions and entrepreneurial activities/skills will also be an added function to shape the careers of the IISER Kolkata students. The Institute/ IISER Kolkata helps each student in exploring placement opportunities (Research Institutes, potential companies and Industries) by inviting various companies for campus recruitment of the BS-MS students of the Institute who are in the final year of the programme and are likely to graduate at the end of the academic year.

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The final placements, at the Institute, are a result of very systematic interaction with the industry/multinational companies and Research Institutions and continuous career counseling of the students. Right from the beginning of the programme, students are continuously counseled with regard to his/her career aspirations and options, which in turn is enthusiastically followed up with the potential companies, industries and research institutes for participating in the placement programme of the Institute.

Keeping in mind the start up scheme of the Government, the Institute has taken an initiative to start an Entrepreneurship Development Cell, in association with Wadhvani Operating Foundation. It is also proposed to start a couple of course on Entrepreneurship for 3rd and 4th year students. This foundation will educate and support student entrepreneurs, startups and SMEs for creating high-value jobs in abroad, operating in association with governments, corporates, mentors, investors and educational institutes. It also creates a city-based entrepreneurial ecosystems consisting of institutes that teach many courses related entrepreneurship.

E-Cell:

The E-Cell of IISER Kolkata was set up with the prime directive of encouraging entrepreneurial thought and helping potential startups turn their ideas into successful businesses. As a science Institute, the exposure to alternatives other than the standard PhD track and positions in industry is quite limited, an omission which is concerning since there is plenty of support in India from both the private and public sectors for startups today. IISER Kolkata has the potential to grow into premier place for startups due to not only the fantastic research work done in the labs here, but also due to the ideas of its students.

Over this previous year, the E-Cell carried out this vision by organizing several talks by veterans of the startup world, scientists who have worked extensively in this field, and mentors, and also organized a workshop in partnership with other institutes around the country. We also started a newsletter for the E-Cell, to further inform and educate people about entrepreneurial spirit. Each of our activities was met with active participation from the student community, both from IISER Kolkata and from colleges in Kalyani.

Members of the Office of Students' Affairs :

Dr. Arindam Kundagrami

Dean, Students' Affairs (DoSA)

Mr. Dibyendu Debnath

Assistant Registrar

Dr. Mettu Vasudev

Physical Education Instructor

Mr. Bipul Kumar Bora

Office Superintendent

Ms. Sharmistha Ghosh

Office Assistant (MS)

Hostels

Dr. Sanjio S. Zade/Dr. Arindam Kundagrami (Officiating)

Chief Warden

Netaji Subhas Chandra Bose Hall

Dr. Partha Mitra

Warden

Dr. Kajaljyoti Borah

Asst. Warden Maintenance

Dr. Venkataraman Mahalingam

Asst. Warden Mess

Ms. Annie Sunita Kerketta

Jr. Assistant

Ishwar Chandra Vidyasagar Hall

Dr. Priyadarshi De

Warden

Dr. Debasis Koley

Asst. Warden Maintenance

Dr. Venkataraman Mahalingam

Asst. Warden Mess

Mr. Prosenjit Mukherjee

Jr. Assistant

Mr. K. Dharma Rao

Attendant

Nivedita Hall

Dr. Neelanjana Sengupta

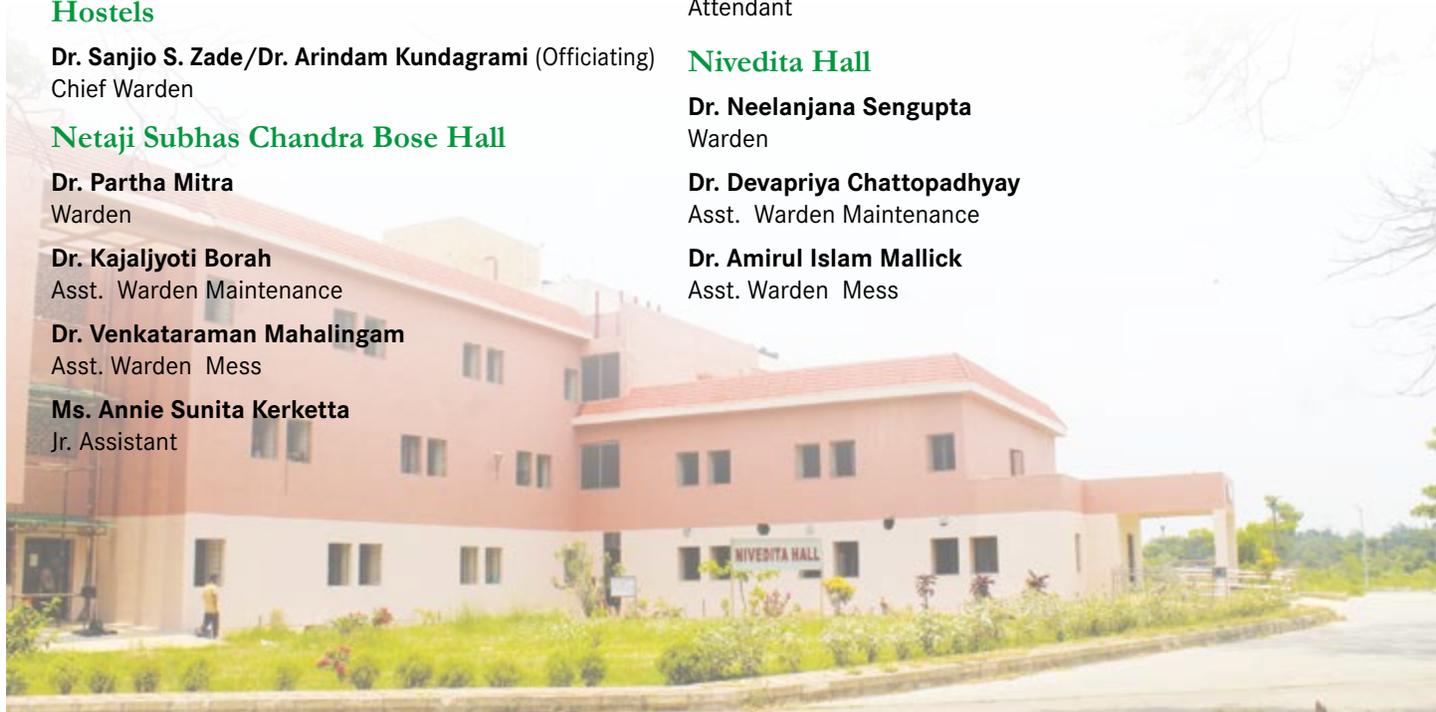
Warden

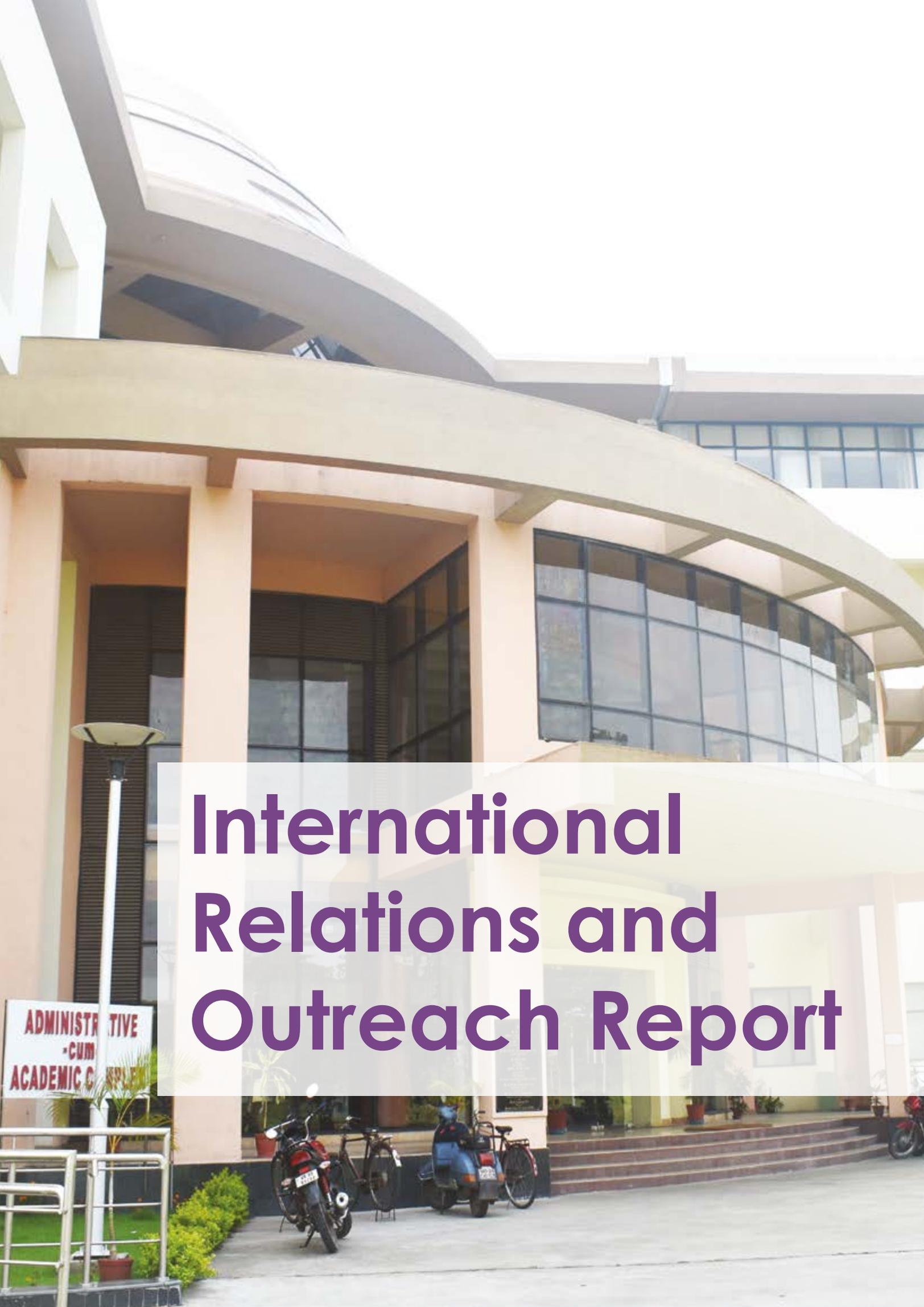
Dr. Devapriya Chattopadhyay

Asst. Warden Maintenance

Dr. Amirul Islam Mallick

Asst. Warden Mess





International Relations and Outreach Report

ADMINISTRATIVE
-CUM
ACADEMIC OFFICE

Dean of International Relations and Outreach (DoIRO) looks after and coordinate Institute's global engagement to develop strong and sustainable international partnerships with other foreign Universities/ Institutes, organizations and funding agencies for research and academic activities through appropriate memoranda of understandings. DoIRO will act as the liaison officer between the external agencies and IISER Kolkata.

The office of the DoIRO is the nodal office for promoting and signing of Memoranda of Understandings (MoUs), coordinating visits of international delegations, taking initiatives to attract foreign students and faculty to visit the campus from various countries across the globe, accelerating the Institute's effort in the area of international outreach and create road map for growing academic and research collaborations with foreign universities and institutions across the country.

These academic partnerships with top-notch foreign universities/institutes will help students' community of IISER Kolkata and faculty members to meet and achieve their international aspirations.

To coordinate with Dean, Academic and Dean, Students in deciding policy matters affect both outbound and inbound students participating in exchange programmes. To coordinate with Dean, Faculty and Dean, R&D in connection with faculty exchange and research related MoUs.

It provides assistance, for the immigration process for faculty and students, frames rules/guidelines for inbound/outbound foreign/Indian students, in coordination with DoAA and DoSA. DoIRO facilitates holding of national/international conferences/ workshops, in coordination with DoRD and HoDs. DoIRO takes initiative for effective implementation of GoI programmes like, GIAN, Ishan Vikash, Unnat Bharat Abhiyan, Rashtriya Aviskar Abhiyan (RAA), etc., through with the Outreach Committee of the Institute.

The alumni community act as brand ambassadors of the Institute. DoIRO will put constant and consistent effort to engage with the alumni through various programmes. We also request our valued alumni to make this bond stronger with their alma mater, effective and live up to the vision and motto of the institution of transforming society.

It coordinates faculty visiting the campus from various countries across the globe, accelerating the Institute's effort in the area of international outreach and create road map for growing academic and research collaborations with foreign universities and institutions across the country. Additionally, DoIRO promotes and coordinates all Institute outreach activities and also students' organized outreach activity like 'Ek Pehal' - meant for the underprivileged local children, etc.

International / National tie-up and MoUs

The following MoUs have been signed for academic and research collaboration and is currently in operation.

Sl.No.	Name of the Institute	Country
1	Max Planck Gesellschoff	Germany
2	Max Planck Institute for Kernphysik, Heidelberg	Germany
3	Institute of Molecular Science (IMS)- Indo Japan Collaborative Research Projects in Molecular	Japan
4	Changsu Institute of Technology	China
5	National Institute of Biomedical Genomics (NIBMG), Kalyani	India
6	University of Kalyani, Nadia, WB	India
7	National Institute of Technology, Agartala, Tripura State	India
8	National Centre for Biological Sciences, TIFR	India
9	Georg-August-Universitat Gottingen , Germany (GAUG)	Germany
10	Lund University	Sweden
11	TATA Medical Center, Kolkata	India
12	Inter - University Centre for Astronomy and Astrophysics (IUCAA), Pune	India
13	The ECOLES NORMALES SUPERIEURES, ENS	France
14	Institute of Environmental Research of the faculty of Chemistry, Dortmund	Germany

MoU with the University of Kalyani:



Initiatives taken for establishing collaboration with the following institutes/ Body in the near future

Sl.No.	Name of the Institute	Country
1.	The University of western Australia	Australia
2.	Curtin University	Australia
3.	University of Bayreuth	Germany
4.	Tripartite MoU (University of Cambridge, Shri Mata Vaishno Devi University)	UK, India
5.	University of central Florida board of trustees	USA
6.	Sikkim University	India

Distinguished Visitor to IISER Kolkata (2018)

Name	Country	Date of colloquium	Title of the talk
Prof. Ramakrishna Ramaswamy <i>(President, Indian Academy of Sciences)</i>	India	05.09.2018	Chance ki Baat Hai
Prof. Debashis Mukherjee <i>Emeritus Professor Raman Center for Atomic, Molecular and Optical Sciences</i>	India	29.08.2018	“Chemistry: the simplest discipline of complex sciences?”
Dr. Maduchanda Kar, <i>BoG Chairperson, IISER, Mohali</i>	India	20.09.2018	Cancer therapy paradigm shift - Era of Personalised Medicine
Prof. Trond Sauve <i>Laboratoire de Chimie et Physique Quantiques, France</i>	France	22.11.2018	“The chemical bond in a relativistic perspective”
Prof. Leahy Martin <i>Chair, NUI Galway</i>	Ireland	08.01.2019	STARSTEM: Reaching for the stars to drive stem cell therapy
Prof. Yury Gogotsi <i>Distinguished University Professor of Materials Science and Engineering at Drexel University in Philadelphia, USA</i>	USA	07.12.2018	Two- Dimensional Carbides and Nitrides (MXenes) Enables New Technologies
Prof. Anand Pathak <i>(School of Physics, University of Hyderabad)</i>	India	22.10.2018	Ion Beams and Lasers for Synthesis, Modification and Characterization of Nanomaterials
Mr. Dhritiman Mukherjee <i>Renowned wildlife photographer</i>	India	12.01.19	“Portraying behavior through Photography”

Name	Country	Date of colloquium	Title of the talk
Prof. Sharon Gusky 2018 ASM-IUSSTF Indo-US Teaching Professor	USA	3.01.19 to 10.01.19	The prevalence of antibiotic resistance in the environment
Prof. Janyant Narlikar Recipient of the Honoris Causa of IISER Kolkata	India	14.06.2018	Searches for extraterrestrial life
Prof. Partha P. Majumder Distinguished Professor and Founder National Institute of Biomedical Genomics, Kalyani,	India	18.04.2018	Our Footprints on the Sands of Time
Prof. Jaewan Kim Korea Institute for Advanced Study, Korea	Korea	20.12.2018	Pseudo Single Photon for QKD
Prof. Howard Carmichael Univ of Auckland, New Zealand	New Zealand	19.12.2018	Monitored quantum jumps: A quantum trajectory view
Prof. Sen Yang The Chinese University of Hong Kong, Hong Kong, China	China	19.12.2018	Towards measurement induced quantum state engineering
Prof. Mandilara Aikaterini Nazarbayev University, Kazakhstan	Kazakhstan	19.12.2018	Quantum compiling with diffusive sets of gates
Prof. Moshe Goldstein Tel Aviv University, Israel	Israel	19.12.18	Entanglement and Conservation Laws in Many-Body Systems
Prof. Dieter Suter TU Dortmund, Germany	Germany	20.12.2018	Optimal control of electronic and nuclear spins as building blocks for robust quantum computers
Prof. B.M. Deb Indian National Science Academy, New Delhi	India	27.03.2019	The Jewel of the Serpent : Glimpses of Mathematics in Ancient and Medieval India
Prof. Dr. T. Ramasami DST, GOI	India	07.05.19 to 09.05.19	1. Towards solution design: A chemists travelogue 2. Greening of chromium based industries 3. Acoustics and Cognitive neuro science of percussion 4. Musical excellence of Mridangam
Prof. M. Laksmanan Centre for nonlinear dynamics, School of Physics, Bharathidasan University	India	22.04.2019	Nonlinear PT- Symmetric Systems and Some of their Implications in Optics
Prof. Shashidhara L.S. Department of Biology, IISER Pune	India	15.04.2019	Science, Technology, Engineering and Medicine in India: past, present and future prospects
Prof. Ashok Banerjee Professor of Finance and Control, IIM Kolkata	India	16.04.2019	Converting idea into enterprise
Prof. V. Chandrasekhar Centre Director, TIFR Centre for Interdisciplinary Sciences, Hyderabad	India	06.03.2019	Periodic Table @ 150: Some Stories

International Outreach: Global initiative of Academic Networks (GIAN) @ IISER Kolkata

Speaker	Country	Host	Lecture Series Title
Prof. Sir Michael Berry, University of Bristol, UK	UK	Prof. Prasanta K Panigrah	Super-oscillations and Weak Measurement
Prof. Isaac F. Silvera, Harvard University, USA.	USA	Prof. Goutam Dev Mukherjee	Studies at high pressures by optical method
Prof. Craig L. Hill, Emory University, USA.	USA	Dr. Soumyajit Roy	Polyoxometalates in materials science, technology and medicine.
Prof. Richard Bellerby, ECNU, Shanghai, P. R. China	China	Prof. Punyasloke Bhadury	Ocean acidification and implications for global marine ecosystems
Prof. James A. Jackson, FRS, University Cambridge, UK.	UK	Prof. Supriyo Mitra	Active Continental Tectonics

MHRD mandated competitions in 2018 at IISER Kolkata

EVENT	THEME	ARTICLE with Title	Author	Ranking
VIGILANCE AWARENESS WEEK 2018	Eradicate corruption and Build a New India	<i>Eradicate corruption and Build a New India</i>	Amarjeet Bagri (Student)	3
		<i>Eradicate corruption and Build a New India</i>	Nabojit Kar (Student)	2
		<i>Eradicate corruption and Build a New India</i>	Zeshan Akhter (Employee)	-
		<i>Corruption is a Predator in Planning New India</i>	Santanu Das Mahapatra (Employee)	1
NATIONAL EDUCATION DAY (Birth Anniversary of Maulana Abul Kalam Azad - 11 November 2018)	A. Importance of Education B. Nation's Commitment to all Aspects of Education	<i>Importance of Education</i>	Amarjeet Bagri (Student)	2
		<i>Indian Education System: A Nation's Commitment to People</i>	Santanu Das Mahapatra (Employee)	1
150Th BIRTH ANNIVERSARY OF M. K. GANDHI (2nd Oct. 2018)	A. Basic Education of Gandhiji and Basic Science Education of IISERs are same somewhere. B. Why Gandhiji is so relevant today in Village Development under UBA (Unnat Bharat Abhiyan)?	<i>Basic Education of Gandhiji and Basic Science Education of IISERs are same somewhere</i>	Mrittika Mohar (Student)	2
		<i>No Paradigm Shift: Gandhiji and Unnat Bharat</i>	Santanu Das Mahapatra (Employee)	1
VIGILANCE AWARENESS WEEK 2018	Eradicate corruption and Build a New India	<i>Corruption</i>	Nabojit Kar (Student)	1
		<i>NIL</i>	Zeshan Akhter (Employee)	-

Events organized by the DoIRO Office:

1. Foundation Day Celebration

11th July is the Foundation day of IISER Kolkata. This year IISER Kolkata Celebrated the Institute Foundation Day on 29th of August. The Program started at 2:30 PM at the Auditorium, J.C. Bose Research Complex and the Foundation day talk at 3:00 PM for this year was delivered by the distinguished Scientist and Academician Prof. Debashis Mukherjee. As is the practice, on this day few staff members of the Institute were honored for their contribution to the Institute by Prof. Sourav Pal, Director, IISER Kolkata and Prof. Debashis Mukherjee, IACS.

Special colloquium by Prof. Debashis Mukherjee (Chemistry: the Simplest Discipline of Complex Sciences?). The Program ended with the vote of thanks by Prof. P.K. Panigrahi (Dean, International Relations & Outreach)

2. Teachers' Day Celebration

Teachers Day is celebrated every year on 5th September in the memory of Dr. Sarvepallai Radhakrishnan who was an Indian philosopher, statesman and the first vice president of India.



On this day the Institute honored some of its former faculty members who had contributed to the all round growth of this institute in its initial phase. The programme started at 3:00 PM, with the colloquium entitled **"Chance ki baat hai"** by Prof. Ramakrishna Ramaswamy, President of the Indian Academy of Science. The institute also on this day took the pleasure of felicitating the erstwhile faculty members with Angavastram, and Memento for the speaker. Few former faculty members expressed their joy on institute's recognition of their Endeavour in its inception stage. The programme ended with the vote of thanks by Prof. P.K. Panigrahi, Dean, and International Relations & Outreach.

3. Unnat Bharat Abhiyan

Centre for rural development and technology

Programme of: Ministry of Human Resource Development (MHRD)

Unnat Bharat Abhiyan (UBA) is a national program funded by Ministry of Human Resource Development (MHRD), Govt. of India. UBA program with a view to bring transformational change in rural development by active participation of higher academic institutions with local communities and IIT Delhi is acting as National Coordinating Institute for Higher Educational Institutes as participating Institute in the country.

Under UBA program IISER Kolkata has adopted a cluster of five villages in consultation with the district collectors for holistic village development.

In these villages Mr. Santanu Das Mahapatra is coordinator for this cluster from Indian Institute of Science Education and Research, Kolkata (IISER KOLKATA).

UBA has conducted one national level seminar in New Delhi on 25th April 2018 and one regional workshop in IIT Kharagpur Extension Counter on 28th July 2018, in which Mr. Santanu Das Mahapatra from the IISER participated.

4. The Square Root of a Sonnet

CESSI, IISER Kolkata and Science City organized the staging of the play "Square Root of a Sonnet" on Friday, 23 March, 2018, 06:00 PM at Science City Mini-Auditorium, J.B.S. Haldane Avenue, Kolkata 700046 and on Saturday, 24 March, 2018, 4:00 PM LHC 107, IISER Kolkata Mohanpur Campus. The shows were free and open to all.

5. Run for Education

"Run for Education": A mini marathon, organized by Team Ek Pehal on 11th March, 2018.



About Ek Pehal: A youth - led initiative by the students of IISER Kolkata, empowers children of the underprivileged and rock-bottom strata of the society. With a vision in mind, as a young movement of enthused dynamic crowd, they are sheltering to discover the true strengths and unleash the full potential and capability of the children living in and around the villages of Nadia, West Bengal. The volunteers visit the neighborhood themselves and try to encourage the families of the underprivileged children by actually stating to them the advantages of Education. Every year on Children's Day celebration with kids take place in the campus.



6. 6th Indian National Exhibition cum Fair 2018 (Participated)

Date and Time: 26th to 29th July, 2018, 2PM to 8PM

Venue: Kolkata Metropolitan Development Authority (KMDA) Ground, Patuli, Kolkata-700094

Organizer: Bengal Human Resource Development

Theme: Science and Technology for National Development

Aim: The aim of the 6th INDIAN NATIONAL EXHIBITION CUM FAIR-2018 is to inform Academicians, Youths, Students, Scholars, Scientists, Government officials, Traders, Buyers, Dignitaries and General public about latest development in the country and achievements of the different Governments and Public Sectors in their respective fields. It is an ideal platform where so many govt. organizations come under a single roof. To be focused and highlight in the exhibition- our Honorable Prime Minister Shri Narendra Modi ji's initiative for Make in India, Digital India, Skill India, Clean-Green India, Education for all startup India.





7. 22nd National Science Exhibition (Participated)

Date and Time: 3rd to 6th August, 2018, 12PM to 8PM

Venue: Milan Samity Maidan, Nimta, Kolkata-700049

Theme: "NEW INDIA: FUTURE LEADER OF THE GLOBE"

Organizer: CENTRAL CALCUTTA SCIENCE & CULTURE ORGANIZATION FOR YOUTH

Aim: To inform the students & youths, Academicians, scholars, scientists and general public about the latest developments of the country and the achievement of the different Government department and Public sectors in their fields.

8. Kalyani Book Fair 2018 (Participated)

Date and Time: 7th to 17th December, 2018, 2 PM to 9 PM

Venue: Central Park, Kalyani, Nadia.

Theme: Uttarbanga

Organizer: Kalyani Book Fair Committee

Institute Outreach team on behalf of IISER Kolkata, as a sponsorship tariff had put an educational stall of 100 sq. ft in the Kalyani book fair. The educational stall was kept alive by the mutual collaboration of various departments that participated each day in turn by show casing their academic achievements to the mass in the fare. This attracted many young aspirants. The outreach activity was a massive success by the distribution of pamphlets, demonstration and presentation.

9. Sundarban Kristi Mela o Lokosanskriti Utsab – 2018 (Participated)

Date and Time: 20th to 29th December 2018.

Place: Basanti

The Institute outreach team with the support of students and the staff members participated in the Sundarban Kristi mela o lokosanskriti utsab from 20th to 29th of December 2018. The activity in large addressed the IISER Kolkata to the mass regarding its various achievements, its scope for the students and its capabilities in the immediate future. The pamphlets detailing the admission procedure was also distributed to the eager aspirants.

10. Celebration of Matribhasa Divas (Mother Tongue Day)

Date: 11th March 2018; Venue: IISER Kolkata Campus

Celebration of the "University in Diversity" of India along with International Mother Tongue Day on 11th March, 2018: An effort to explore the cultures of nine different states in a single program. This was the first among the series of cultural evenings that was celebrated this year under the flagship intuitive of flagship of "Ek Bharat Shresth Bharat" (EBSB).

11. International Day of Yoga

Date: 21 June 2018, Venue: IISER Kolkata

As per MHRD mandate IISER Kolkata had observed three weeks Yoga Programme for the celebration of International Day of Yoga 2018. Keeping in mind the importance of the programme and to enhance the active participation for the same, the institute had invited a yoga team from the world yoga society. With the lectures on benefits of Yoga, poster presentation, quizzes and with participation of the families and children the International Day of Yoga was a successful one.



12. IISER Kolkata- JBNSTS (Jagadish Bose National Science Talent Search) Workshop

Date: 5th May 2018 to 9th May 2018; Venue: IISER Kolkata

IISER Kolkata had conducted a workshop from 5th May 2018 to 9th May 2018 in which around 200 students of JBNSTS took part.

Jagadish Bose National Science Talent Search (JBNSTS), Kolkata is an Autonomous Registered Society under West Bengal Society Registration Act XXI of 1860 (No.S/4353 of 1960-61). This organization is promoted by the Government of West Bengal and administered by a Governing Body with representatives from the State Government, Academics and Industry. Conceptualized in 1958 by visionaries such as Dr. B C Roy and Sir Jhangir Ghandy, JBNSTS was initiated to commemorate the Birth Centenary Celebration of India's first modern scientist, Acharya J C Bose. The program was inaugurated by Pandit Jawaharlal Nehru. It enjoys status of a special institution as declared by Department of Higher Education, Government of West Bengal.

During the initial years, JBNSTS was considered a popular scheme for providing scholarships to meritorious students. Gradually JBNSTS has shed away its image of just a scholarship giving scheme and for nearly four decades now, this institution has evolved as a pioneering centre for identifying and nurturing young talented students of science, medicine and engineering who would grow up to become leaders in their fields. JBNSTS has thus gradually grown to become an institution providing a range of educational opportunities to the promising student scientist. Initially financed by the Government of West Bengal, its activities were limited to students of this State. As the programs of the institution gained impetus and popularity in terms of student service, JBNSTS spread its umbrella to cover 12 other States: Assam, Arunachal Pradesh, Meghalaya, Manipur, Mizoram, Nagaland, Tripura, Sikkim, Bihar, Orissa, Jharkhand and Chattisgarh.

13. International Day of Light

Date: 19th May 2018, Venue: IISER Kolkata Campus

Organizer: SPIE IISER Kolkata Student Chapter

SPIE is an international not-for profit professional society for optics and photonics technology. The IISER Kolkata has the **SPIE IISER Kolkata Student Chapter**, which was established in the year 2012. Apart from various outreach activities in institute level, The SPIE chapter of IISER Kolkata is the proud organizer of various international conferences and workshops including the Asian Students Photonics Conference (ASPC-20140, Contemporary trends in optics (CoOpt-2107), Telescope Making workshop and others.

The SPIE chapter is one of the recipients of the 2018 SPIE International Day of Light microgrant (only 13 chapters selected from all over the world). This grant is given for organizing events/activities in the month of May 2018 in order to highlight the importance of light and light technologies in our lives and also to help appreciate the role of such technologies in shaping our future.

As part of this, the SPIE chapter of IISER Kolkata conducted One-day Optics Festival on 19th May 2018, in which around 200 students from Kalyani and nearby schools took part. Even the senior students of EK Pehal took part in this event and made it a successful one.

14. Study India Program

Prof. Soumitra Banerjee, visited Nepal, Kathmandu regarding Study India Program which was organized by EDCIL (Educational Consultants India Limited, under administrative control of MHRD) from 18th-19th May 2018.

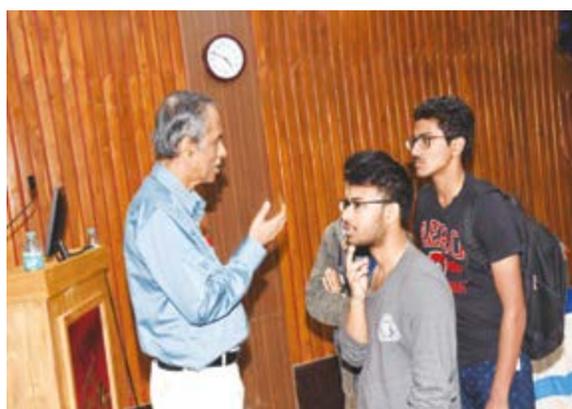
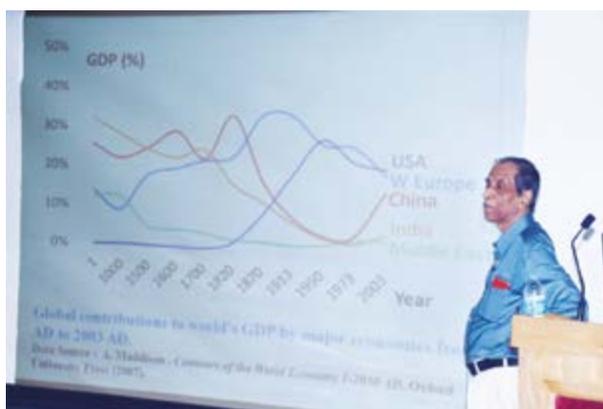
About Study India Program: The Ministry of Human Resources Development (MHRD) in collaboration with Ministry of External Affairs has approved 'Study in India' programme to attract foreign students to pursue higher education in India. The programme is similar to initiative launched by Australia, Malaysia, Singapore and Canada. It aims at boosting country's share of international students and subsequently, improves global reputation and rankings of Indian educational institutions.

Objectives:

- Encourage more foreign students to choose India as destination for higher education
- Double India's market share of global education exports from less than 1% to 2%
- Improve global ranking of Indian educational institutes.

15. Icons of Modern Science:

This year's lecture in the lecture series "Icons of Modern Science" was delivered by Prof. B.M. Deb (Indian National Science Academy, New Delhi) on 27th of March.



16. Visit of DAAD delegation:

The DoIRO office on behalf of IISER Kolkata hosted the DAAD delegation on 14.03.2019. The intention of the said visit was to interact with Academicians and scholars regarding the developments and opportunities in higher education and research in Germany.



17. National Science day Celebration:

National Science Day in IISER Kolkata was celebrated for two consecutive days, i.e. on 28.2.2019 and 1.03.2019. Prof. Partha Ghose and Prof. Debashis Mukherjee delivered plenary lecture for the National Science Day. The Institute also on this day honored many teaching and non-teaching staff for their contribution in the field of Science.



18. Visit of Delegation from the University of Bayreuth

Three delegations from the University of Bayreuth (Germany) visited IISER Kolkata on 11.12.2018 for exploring Academic and Research collaborations.

PROF. DR. TORSTEN KÜHLMANN, Chair of Business Administration (Human Resource Management, Faculty of Law, Business and Economics) –

DR. ARNIM HEINEMANN, Director of the International Office (also representing the Faculty of Humanity and social Sciences) –

WIEBKE DÖRFLER, Managing Director of the BayIND Bavarian-Indian Centre.

The agenda of the meeting was: Internationalization strategy; International affairs, relations and cooperation; International strategic partnerships, International Funding Programs for Indian students for internship, student exchange programme, summer school, Scholarships for foreign students (Stibet, DAAD, Free State of Bavaria), finances, guesthouse, faculty exchange, double degrees.



19. Namaste + Program

IISER Kolkata being one of the partners Institute of the NAMASTE+ mobility project attended a meeting organized by the University of Göttingen and IISER Pune.

The main aim and objective of the program is to improve mutual understanding between the EU and India and enhance political, cultural, educational, and economic links of India with the EU.

Prof. Prasanta Sanyal, DoRD and Mr. Dibyendu Debnath, Asst. Registrar, International Relations and Outreach was nominated from IISER Kolkata to attend the meeting.



Members of the office of International Relations and Outreach

Prof. Prasanta K. Panigrahi
(Dean of International Relations & Outreach)

Dr. Soumyajit Roy
Convener (Outreach)

Dr. Amirul Islam Mallick
Member (Outreach)

Mr. Dibyendu Denath
Assistant Registrar (International Relations & Outreach)



Library



Overview

The prime aspect for this period (2018-19) under report from the library was finally finding its new and permanent place inside the permanent campus of IISER Kolkata. After moving and relocating through various temporary locations, the library was shifted to its permanent home during this financial year. Now, the whole library is spread through a sprawling area of three floors covering a total space of around 12,000 square feet. The library with its different service points is now placed in different locations convenient to its users. Plans are afoot to design the whole place in a manner commensurate with the delivery of an state of the art library and information services in a basic science teaching and environment. The institute authority been kind enough to accept the services of a professional interior designer for making it possible.

The IISER Kolkata Library, like previous years, continued to play a pivotal role in satisfying the needs of its community's seeking of learning and teaching resource materials. During the period under report, apart from procuring the important and relevant e-books, online journals and databases, the library also acquired curated lists of books on various subjects. It helped to cover the gap in our existing collections with both back titles and newly published important ones.

Like previous years, this year the library has also started subscribing several new journals, both online and print. This year, the library started new print subscription of several essential journals and popular magazines to rejuvenate the science learning experience of our students specially. From this year, the library began to subscribe to the complete journal collection of the American Association for Cancer Research. In addition to these, the library also procured a sizeable number of Springer mathematics and statistics e-books during the period under report.

The Library added 711 printed books to its collection during the reported period. Apart from that, the library received 58 printed documents as gratis. The online institute repository contains about 800 theses and dissertations.

Approximately 19,554 transactions (for printed books and audio-video materials) took place at the circulation desk. As part of document delivery service, the library supplied 64 papers and book chapters to its own community. On account of Inter-Library Document Delivery Service, the library provided 11 papers to other academic institutions. The library provided around 9,963 scanned pages/photocopies/printouts to its users.

To continuously serve its users, the library took endeavors to continue to subscribe to resources from the following eminent scholarly societies:

1. American Chemical Society - journals with their archive
2. American Geophysical Union - complete journal collection with their archive
3. American Institute of Mathematical Sciences
4. American Mathematical Society
5. GeoScienceWorld with GeoRef database
6. IEEE society journals and conference proceedings database
7. Institute of Mathematical Statistics - Complete journal collection
8. Institute of Physics journals package
9. Optics Infobase database of Optical Society of America
10. Royal Society Science collection
11. Royal Society of Chemistry - journals with their archive
12. Society for Industrial and Applied Mathematics (SIAM) - Complete journal collection and archive

Apart from these,

The Institute receives access to the following resources as a member of the e-Shodh Sindhu: Consortium for Higher Education Electronics Resources of MHRD:

1. ACM Digital Library
2. American Institute of Physics
3. American Physical Society
4. Annual Reviews
5. Economic & Political Weekly
6. Institute for Studies in Industrial Development (ISID) Database
7. JGate Plus (JCCC)
8. JSTOR
9. MathSciNet
10. Oxford University Press
11. Springer Link 1700 Collection + Nature Journal
12. Web of Science

Besides, the library also subscribes the SciFinder database to help its chemistry user community in their bibliographic search.

Writing Support Service

As part of providing writing support service to our users in their writing, the library started to subscribe to the *Grammarly* tool from this financial year.

Originality Plagiarism Checking Service

Library subscribed online tool *Turnitin* assists our users to prevent any inadvertent mistake in acknowledging the resources they used while preparing their term papers, dissertations or theses.

Future Plan

The library is in the process of designing all the floors with a suitable arrangement of its resources and service points commensurate with the right kind of furniture and fixture considering the aesthetics of the library building. The institute has already engaged one interior decorator firm to complete this process. It is hoped that the library may soon become the most sought after place in the campus offering both serious engagements with one's study as well as for soothing one's mind with some light reading. It has been planning to make it users comfortable reading place with all possible amenities. It will provide space for Skype Room, small presentation practice room and few discussion rooms too for the benefit of the users.

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



Library Hours (2018-2019):

Monday – Sunday : 24 Hours

Library Staff Members

Dr. V.R. Tiwari
Librarian

Siladitya Jana
Assistant Librarian

Mr. Sushanta Kumar Roy
Library Information Assistant

Mr. Pitambar Naskar
Library Information Assistant

Mr. Pradeep Dhara
Office Assistant (MS)

Helping Staff

Tapas Saha

Sarathi Biswas



A close-up photograph of a laptop. The screen shows a code editor with CSS code. The code includes a comment /* =Menu */ and two CSS rule blocks: #access { display: inline-block; height: 69px; float: right; margin: 11px 20px 0 0; max-width: 800px; } and #access ul { font-size: 13px; list-style: none; margin: 0 0 0 -20px; padding-left: 0; z-index: 99999; text-align: right; } Below the code, a taskbar with several application icons is visible. In the foreground, the laptop's keyboard is partially visible, showing keys for numbers 1, 2, 3, 4, and function keys F3, F4, and F5.

Computer Centre

Computing Facilities at IISER Kolkata

The Computer Center at IISER Kolkata maintains a wide variety of state-of-the-art computing facilities to cater the needs for performing the cutting-edge research as well as to maintain a very high-standard of academic activities.

All buildings in the campus are connected through high speed Optical Fiber Cable Network which provided gigabit ethernet connections to the end-users. Further, the entire campus of the institute is wifi enabled through a combination of 2.4 and 5 GHz channel. The institute at present is connected to the internet through a combination of 1 Gbps leased-line from National Knowledge Network (NKN) and a gigabit broadband connection from Alliance Broadband. The campus network is made secured against ever-increasing cyber-attacks by installing multiple state-of-the-art open-source Endian firewalls which also provide automatic switchover of internet uplinks to maintain an uninterrupted internet connectivity.

The institute has a well equipped Virtual Classroom to conduct and participate in e-classes offered by the institutions across India. It also has well equipped Computer Center with the sitting capacity of 75 users.

All the entry gates of the Institute and other strategic locations are monitored through IP Camera based Surveillance System. All institute offices, laboratories, entrance gates and security checkpoints are equipped with IP based VoIP phones.

The high-performance scientific computational needs of the institute are catered through the existing Ramanujan Cluster and newly installed the Dirac Supercomputer. The existing Ramanujan cluster has 216 cores along with 48 GB of RAM per node. It also has several terabytes of connected storage. Additionally, the computing needs of the institute are also augmented through multiple high-end workstations that are installed in every departments.

The Computer Center maintains following services in the campus network.

Mail, Web, LDAP, DNS, Gateway, Firewall, NFS, VPN, Data Storage & Backup Solution, Institute ERP, in-house developed Academic ERP, Moodle based Course Management System, Intranet, Internet, WiFi etc.

Institute is committed and is closely working to have a paperless administrative environment in the campus.

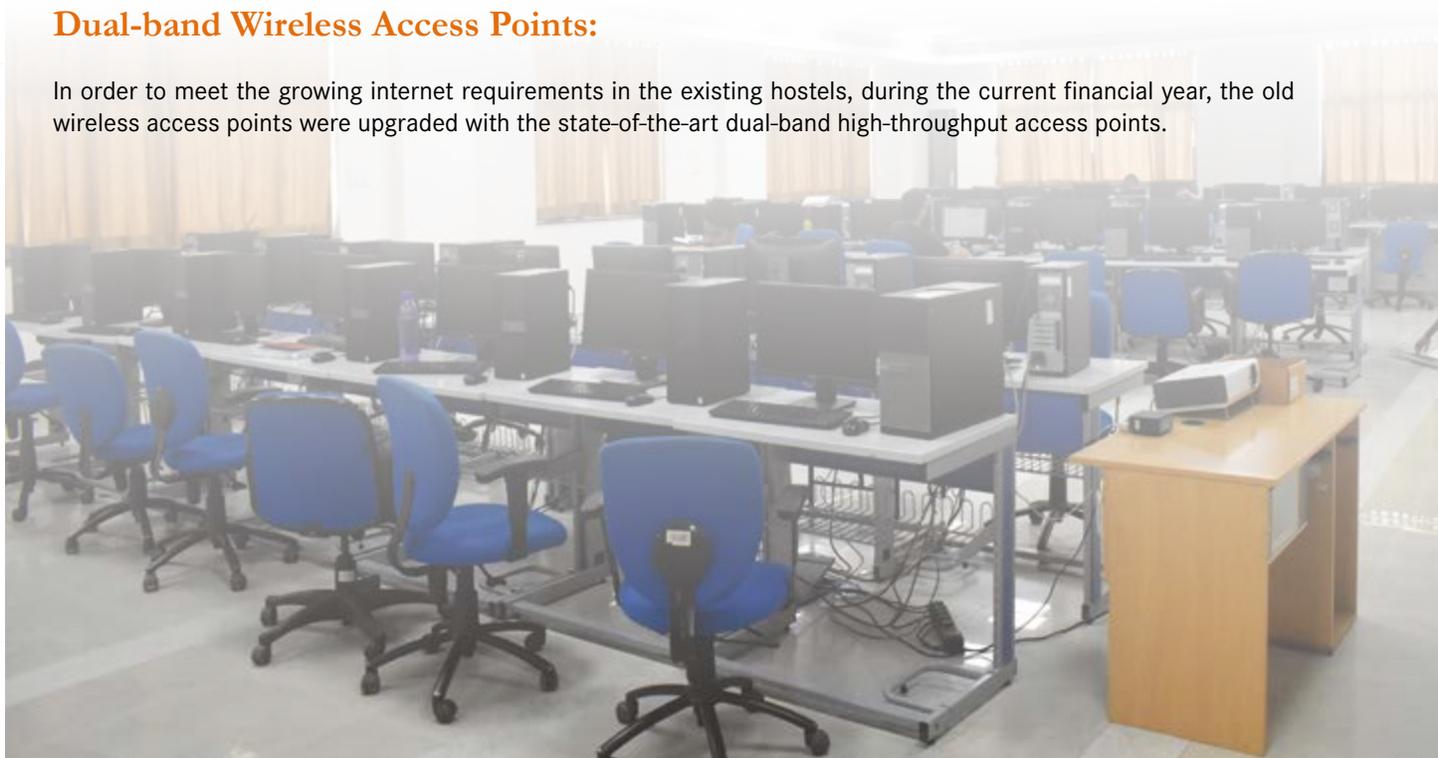
During the financial year 2018-19, the following computational systems were newly installed or upgraded:

Biometric attendance system:

During the current financial year, the biometric class attendance system for first and second year BS-MS students were implemented. An automated attendance record syncing mechanism with the existing course management system, WeLearn, have also been put in place. It allows instructors, students and academic cell members to monitor the attendance records on a daily basis through WeLearn portal.

Dual-band Wireless Access Points:

In order to meet the growing internet requirements in the existing hostels, during the current financial year, the old wireless access points were upgraded with the state-of-the-art dual-band high-throughput access points.



New Institute Website:

During the financial year, both hardware and software for the existing institute website were upgraded. The new website is now powered by the latest open-source based technology, namely Django web framework.

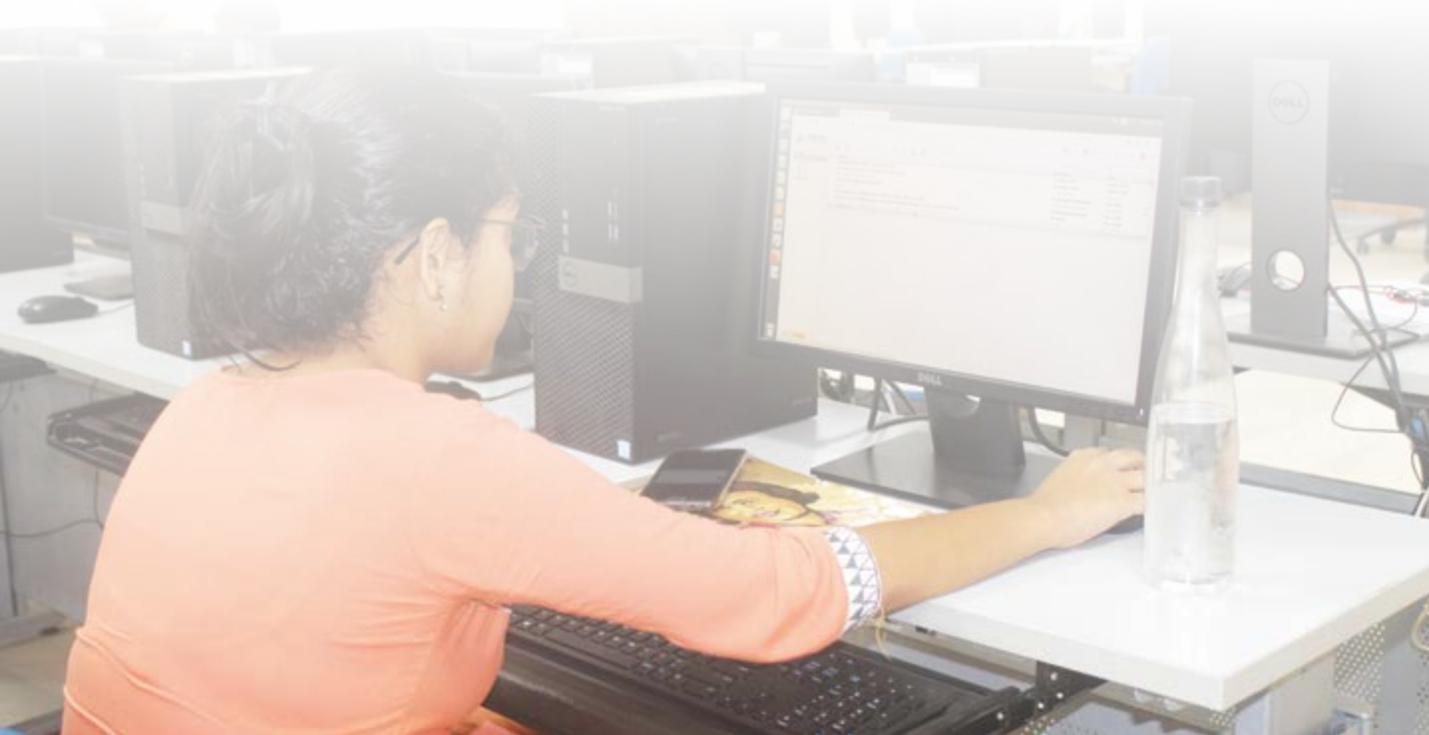
Supercomputing Facility

The Dirac Supercomputer:

In order to cater high performance scientific computing requirements of the researchers, the institute has set-up a top-end high-performance computing cluster, named as the **Dirac Supercomputing Facility** in the current financial year. The Dirac cluster has both GNU and Intel compilers. It comes with multiple job queue management system along with several terabytes of networked storage. The performance of the Dirac Supercomputing facility is 78.8 Teraflops which includes 60 Teraflops of CPU) and 4×4.7 Teraflops of GPU.

Configuration of Dirac Cluster :

- i) **Operating System :** Rocks 7 (Based on CentOS 7)
- ii) **Master Node :** 2 CPU Socket
 - Each Socket :** 20 core, 2.4 GHz Intel Xeon Skylake scalable processor 128 GB DDR4 ECC RAM
 - Storage :** 32 TB with RAID-5 on 100 GBPS network backbone
- iii) **2 GPU Node :** 2 CPU Socket,
 - Each Socket :** 20 core, 2.4 GHz Intel Xeon Skylake scalable processor 128 GB DDR4 ECC RAM, 2 × TESLA P100 (16 GB memory) Nvidia GPU
- iv) **6 FAT Node :** 2 CPU Socket,
 - Each Socket :** 20 core, 2.4 GHz Intel Xeon Skylake scalable processor 512 GB DDR4 ECC RAM
- v) **30 Compute Node :** 2 CPU Socket,
 - Each Socket :** 20 core, 2.4 GHz Intel Xeon Skylake scalable processor 128 GB DDR4 ECC RAM
- vi) **Connectivity:** 100 GBPS Infiniband
- vii) **Storage:** 130 TB on RAID-5 NAS Storage with 20 GBPS network for Backup.
 - FLOPS :** 60 Teraflops (CPU) + 4×4.7 Teraflops (GPU) = 78.8 Teraflops



List of members of Computer Center

Shahid Ali Farooqui
System Administrator

Rana Bhadra
Technical Officer

Arnab Kumar Sadhukhan
Technical Officer

Sanjib Das
Technical/Scientific Assistant

Saikat Bhattacharyya
Software Assistant

Sujit Sarkar
Attendant - Multi Skill





Administrative Report

Major administrative activities of the Institute during the year 2018-19:

1. **Meetings:**
 - (i) Four meetings of the **Board of Governors** were held on 13.06.2018, 10.10.2018, 10.01.2019 and 30.03.2019, respectively.
 - (ii) Three meetings of the **Finance Committee** were held on 13.06.2018, 10.01.2019, and 30.03.2019, respectively.
 - (iii) Four meetings of the **Senate** were held on 21.05.2018, 26.07.2018, 21.12.2018 and 18.03.2019, respectively.
 - (iv) One meeting of the **Building and Works Committee** was held on 08.01.2019.
2. The **Sixth Convocation of the Institute** was held on 13.06.2018 at the permanent campus of IISER Kolkata. **Mr. N. R. Narayana Murthy, eminent industrialist, philanthropist and co-founder of Infosys** was the Chief Guest and Prof. J. V. Narlikar, eminent astro-physicist was conferred the Honoris Causa by IISER Kolkata. A total of 177 students – 133 BS-MS; 1 - MS by Research; 9 - IPhD (with MS), 10 - IPhD and 24 PhD students – received their degrees in the 6th Convocation of IISER Kolkata.
3. Celebration of **83rd UTKAL DIVAS** on 02.04.2018 by the students of IISER Kolkata through an array of colourful programmes highlighting the rich cultural heritage of Odisha.
4. An **online counseling service** was launched on 03.04.2018 in collaboration with **YourDost** (India's first and largest online mental health and emotional institution/organization) to get a professional counseling service for all members of the Institute
5. The **3rd Blood donation Camp of IISER Kolkata** was organized on 04.04.2018 with the Voluntary Blood Donation members and Government Blood Banks of West Bengal.
6. The **SPICMACAY chapter of IISER Kolkata** organized a classical instrumental programme on 10.04.2018 by renowned Santoor artist, Pandit Tarun Bhattacharya
7. A special event on **Kobiguru Rabindranth Tagore** to commemorate Tagore's Birth Anniversary – **Rabindra Jayanti** and to remember the works which created a renaissance in literature was celebrated on 09.05.2018
8. **National Technology Day** was celebrated on 11.05.2018 with an interactive session on the newly formed RISE Foundation, IISER Kolkata.
9. A **one-day Optics Festival**, Institute SPIE Outreach Programme, on the occasion of International Day of Light, was organized on 19.05.2018 for students of nearby schools and colleges along with research scholars of IISER Kolkata.
10. **Special Institute Colloquium** was held on 14.06.2018 by Prof. Jayant V. Narlikar, IUCAA, Pune on the topic, "Searches for extra-terrestrial life"
11. The **4th International Day of Yoga** was celebrated on 21.06.2018 with a 3-week Yoga session from 1-21.06.2018
12. **The 72nd Independence Day Celebrations** held on 15.08.2018 was marked by hoisting of the National Tricolour, awarding of Gold Medal for overall topper and CNR Rao Education Foundation Prize, Freedom Run and Tree Plantation by Prof. Sourav Pal, Director, IISER Kolkata.
13. Foundation Day Lecture of IISER Kolkata was delivered by **Prof. Debashis Mukherjee**, distinguished scientist and academician, on 29.08.2018.
14. **Swachh Bharat Pakhwada** was observed during 01.09.2017 to 15.09.2017 to promote and inculcate cleanliness within IISER Kolkata community and its surroundings.



15. **Teacher's Day** was celebrated at IISER Kolkata on 05.09.2018 by the student community as a mark of respect to all the teachers through a cultural programme and felicitation of teachers.
16. **Special Institute Colloquium** was delivered by Prof. Ramakrishna Ramaswamy on the title: Chance की बात ह on 05.09.2018
17. **Rajbhasha Pakhwada** was held from 14-28.09.2018. A two-week long programme was hosted by the Rajbhasha Karyanvayan Samiti to mark the Official Language implementation and promoting use of Hindi in official Work.
18. **Swacchata Hi Seva – an initiative by MHRD**, commenced on 15.09.2018 by supporting and implementing cleanliness drive by IISER Kolkata community.
19. **Rajbhasha Workshop** which included workshops in Hindi, Hasya Kavi Sammelan and Scientific Conference in Hindi was organized on 20-21.09.2018 by Rajbhasha Karyanvayan Samiti.
20. **RSC Roadshows** was organized by IISER Kolkata on 24.09.2019
21. **Gandhi Jayanti Celebration** was organized on 02.10.2018 to commemorate 150th Birth Anniversary of Mahatma Gandhi and was marked by various programmes like *Prabhat Pheri*, *Cleanliness drive and felicitation of freedom fighters*.
22. A **Press Conference** was convened by Director, IISER Kolkata to announce the Shanti Swaroop Bhatnagar Prize, the highest Science and Technology prize of India, to two outstanding scientists from IISER Kolkata in Chemical Sciences.
23. **Rashtriya Ekta Diwas (National Unity Day)** was celebrated on 31.10.2018 by observing and celebrating the birth anniversary of Sardar Vallabhai Patel by pledge taking and *Ekta Run* (Run for Unity).
24. IISER Kolkata celebrated the **World Mental Health Day** on 10.10.2018 highlighting the theme : 'Young people and mental health in a changing world'.
25. The **SPICMACAY Chapter** of IISER Kolkata held a classical performance on 31.10.2018 by Pandit Vishwa Mohan Bhatt on Mohan Veena accompanied by Shri Himanshu Mahant on the Tabla.
26. **SGBT 2018 – “Sweet 18: Glycochemistry, Biology and Technology”** was organized at IISER Kolkata from 19 -21.12.2018
27. **IICM 2018:** was held on 21-23.12.2018 in which IISER-K bagged the winning position among all IISERs and IISc.
28. A **conference on “Understanding Behaviour 2019”** was held on 11-13.01.2019 in which around 250 participants from across the country participated.
29. **OSA Travelling Lecture 2019** was held on 16.01.2019 by Prof. Alex Vitkin, University of Toronto on the topic, “Photon mayhem: using light for structural and functional assessment of biological tissues”
30. **Theatre performance** by Prof. Ayan Banerjee, 'The Uncertainty of Principles' was held on 16.01.2018.
31. **SPICMACAY West Bengal State Convention** took off with a plethora of cultural events including concerts by maestros, movie screenings and craft workshops from 25-27.01.2019
32. **The 70th Republic Day** of our country was celebrated by the IISER-K family amidst various programmes on 26.01.2019.
33. **Celebration of Institute Outreach Programme – Ek Pehal's 4th Anniversary** was held on 11.02.2019 by various events with the children of nearby areas of IISER-K.
34. **Leadership for Academicians Program (LEAP)** was held from 11-22.02.2019 through various lectures and panels under the program designed to create and nurture top level leaders of Indian higher education organizations.
35. **National Science Day Celebrations** was organized from 28.02.2019 – 01.03.2019 with Plenary talks by Speaker: Prof. Partha Ghose on the Title: “Bengal



Renaissance and the Birth of Modern Science in India”, further talks by Prof. Debashis Mukherjee, SNBNCBS Kolkata, and Prof. Sourav Pal, Director IISER-K followed by Honouring Ceremony of Faculty and staff of IISER Kolkata for their research and innovation and Awarding C N R Rao Education Foundation Prize.

b) A short presentation by the Rescue and Relief Foundation, Kolkata and felicitation of RRF for their work for girl children who are victims of human trafficking c) Screening of the short film “Flight of a Red Kite” and an interactive session with the film makers - students Ms Arunita Banerjee and Mr. Siddharth Khan

36. **Special Institute Colloquia** were held on 06-07.03.2019 Prof. V. Chandrasekhar Centre Director, TIFR Centre for Interdisciplinary Sciences, Hyderabad and Speaker: Prof Herbert Walter Roesky Honorary Professor, IISER Kolkata
37. **International Women's Day** was celebrated on 08.03.2019 by a) a Special lecture by Prof. Somdatta Sinha, IISER Mohali, on her journey as a scientist
38. **Special Institute Colloquium** was held on 15.03.2019 on the title: Title: “Controlling nonlinear plasmonics through the shape and materials of nanostructures”
39. **The 9th edition of Inquivesta** – Science, technology and cultural festival was organized annually by IISER Kolkata, from 8-10.03.2019 with a plethora of competitions, workshops and exhibitions.

Achievements of staff members 2018-19

Sanjib Das

Technical Assistant

- Debut book ” PASCHIM SIKKIM EK ACHIN DESH “ (Category - Travel, Nature) has been published in the year 2018.
 - The book is written on Sikkim Himalaya and has been highly acclaimed by the critics and readers.
 - Publisher: Long Journey
 - ISBN: 9788193648001
 - For Details : <http://longjourney.in/bookstores/>
- Event: Slide show competition organized by YMCA (Youth Mountaineering & Cultural Association Naihati)
 - Category: Adventure Trekking
 - Award: 2nd Runner Up
 - slide show titled: “ Cloudy Hampta Pass “
 - Year: April 2018
 - Additionally, several travelogues and nature photo works published in some reputed magazines.

Shahid Ali Farooqui

Systems Administrator, IISER Kolkata

- Invited as Speaker in National Workshop on Use of ICT in Teaching Learning Processes, held on 5th September 2018 at Kalyani University, Kalyani.
- Invited to participate in the National Conference of Directors of Computer Centres in IITs, IIMs, IISERs, NITs and Central Universities held during 15-17 November 2018 at Banaras Hindu University, Varanasi

Bhaswati Bhowmik

PRO, IISER Kolkata

- Awarded with a fellowship under Malaysia Technical Cooperation Programme (MTCP) to pursue a course on “PPP & Infrastructure Development: The Malaysian Experience” at the Public Private Partnership Unit, Ministry of Finance, Malaysia during 29 July - 4 August 2018.

Mr. Kasi Viswanath Reddy

Superintendent Engineer, IISER Kolkata

- Has been enrolled as FELLOW OF INSTITUTION OF ENGINEERS (INDIA) on 28 Feb 2019

Soumyendra Narayan Chakrabarty Choudhury

Accountant, IISER Kolkata

- Received the degree in Cost and Management Accountant (CMA) from the Institute of Cost Accountants of India.

Administrative Staff List



Non-teaching Staff

Group A

Joydeep Sil

Registrar, Administration

Uday Kumar

Sr. Scientific Officer, Physical Sciences

Kambalapalli Srikant

Sr. Scientific Officer, Chemical Sciences

D.Govinda Rao

Deputy Registrar(F&A), Finance & Accounts

Shahid Ali Farooqui

System Administrator, Computer Centre

Siladitya Jana

Assistant Librarian, Library

Sanad Kumar Shukla

Assistant Registrar, Establishment

Rana Bhadra

Technical Officer, Computer Centre

Sushmita Bhattacharjee

Assistant Registrar (Academics), Academic Cell

Arnab Kumar Sadhukhan

Technical Officer, Computer Centre

Sunita Bhattacharjee

Technical Officer(Civil), IWD

Santanu Das Mahapatra

Assistant Registrar, Administration

Parna Gupta

Scientific Officer, Chemical Sciences

Indrajit Chatterjee

Scientific Officer, Physical Sciences

Partha Banerjee

Technical Officer(Electrical), IWD

Chinmay Sarkar

Assistant Registrar (F&A) against lien vacancy,

Suraj Narayan Bordoloi

Assistant Registrar, Faculty Affairs

Kaushal kumar Sharma

Chief Security Officer, Administration

Vijay Raghav Tiwari

Librarian, Library

Dibyendu Debnath

Assistant Registrar, Student Affairs

D.Kasi Viswanatha Reddy

Superintending Engineer, IWD

Biswajit Das

Assistant Registrar (F&A), Finance & Accounts

Pradip Khatua

Scientific Officer, DPS

G. Lekha

Scientific Officer, DBS

Mayukh Pal

Medical Officer, Medical Unit

Priya Dey

Medical Officer, Medical Unit

Group B

Immanuel Alexander

Private Secretary to Director, Director's Office

Debabrata Mazumder

Asst. Engineer (Electrical), IWD

Shibajee Das

Asst. Engineer (Civil), IWD

Arnab Chattopadhyay

Tech/Scientific Assistant, Chemical Sciences

Saberi Sen

Office Superintendent, Academic Cell

Shibnarayan Paul

Office Superintendent, Purchase Section

Sanjib Das

Tech/Scientific Assistant, Computer Centre

Rajni Marick

Tech/Scientific Assistant, Physical Sciences

Sushanta Kumar Roy

Library Information Assistant, Library

Mettu Vasudev

Physical Education Instructor, Student Affairs

Santosh Ch. Das

Scientific Assistant, Earth Sciences

Pitambar Naskar

Library Information Assistant, Library

Subhankar Das

Technical Assistant (Civil), IWD

Mitali Pal

Personal Assistant, Research & Development

Gopal Shankar Mukherjee

Technical Assistant (Electrical), IWD

Ritabrata Ghosh

Scientific Assistant, Biological Sciences

Surashree Dutta

Junior Translator, OL

Ganga Ram Roy

Accountant, Finance & Accounts

Himanshu Ghosh

Junior Superintendent, Purchase Section

Group C

Puskar Das

Office Assistant (MS), DOF Office

Sudip Mitra

Lab Technician, Biological Sciences

Prasanta K Bhui

Office Assistant (MS), Finance & Accounts

Sukhendu Chatterjee

Office Assistant (MS), Finance & Accounts

Debabrata Sutradhar

Lab Technician, Biological Sciences

Rupan Chandra Rakshit

Lab Technician, Earth Sciences

Piyali Bose

Lab Technician, Chemical Sciences

Gour Gopal Paul

Lab Technician, Physical Sciences

Ashok Das

Accountant, Finance & Accounts

Raju Sethi

Accountant, Finance & Accounts

Mustaque Khan

Junior Superintendent, Director's Office

Bipul Kumar Bora

Office Superintendent, DoSA

Manoj Dutta

Junior Engineer (Electrical), IWD

Anirban Howlader

Technical Assistant, IWD

Dipesh Dutta

Scientific Assistant, DBS

Saikat Bhattacharyya

Software Assistant, Computer Centre

Soumyendra N.C.Choudhury

Accountant, Research & Development

Joy Chakraborty

Personal Assistant, Director's Office

Purabi Mondal

Nursing Assistant (MS), Medical Unit

Deepak Kumar Panigrahi

Nursing Assistant (MS), Medical Unit

Sharmistha Ghosh

Office Assistant (MS), Student Affairs

Pintu Das

Lab Assistant, Physical Sciences

Sudhansu Maity

Lab Assistant, Biological Sciences

Saroj Nayak

Lab Assistant, Chemical Sciences

Aveek Chattopadhyay

Lab Assistant, Earth Sciences

Subhas Malo

Attendant Physical Sciences

Sanjit Singh
Attendant, Director's Office

Soumya Kanti samanta
Junior Assistant, Research & Development

Ajay Kumar Das
Attendant(Multi Skill), Administration

Avijit Debnath
Junior Assistant, Director's Office

K. Dharma Rao
Attendant(Multi Skill), IWD

Zeeshan Akhtar
Junior Assistant, Academic Cell

Sujit Sarkar
Attendant(Multi Skill), Computer Centre

Prasenjit Ghosh
Junior Assistant, Establishment

Shyamal Sana
Attendant(Multi Skill), Student Affairs

Suvadip De
Junior Assistant, IWD

Nitin kumar Mall
Office Assistant (MS), Research & Development

Annie Sunita Kerketta
Junior Assistant, DPS

Soumen Mondal
Lab Assistant, DCS

Sanjoy Bhowmick
Office Assistant(MS), Stores & Purchase

Arun Dutta
Junior Assistant, Academic Cell

Abir Banerjee
Office Assistant(MS), Administration

Joydeep Sengupta
Junior Assistant, Faculty Affairs

Supriya Gupta
Junior Assistant, Faculty Affairs

Hira Lal Pasi
Junior Assistant, Establishment

Pradip Chandra Dhara
Office Assistant(MS), Library

Prosenjit Mukherjee
Junior Assistant, Student Affairs





Important Administrative Committees

Members of The Board of Governors of IISER Kolkata

(As on 30.03.2019)

Chairperson, Board of Governors, IISER Kolkata

Prof. (Retd.) Arvind A. Natu
IISER Pune
Former Senior Scientist,
National Chemical Laboratories (NCL)

Ex-officio Secretary
Department of Higher Education
MHRD, Govt. of India
Shastri Bhavan, New Delhi-110 001

Prof. Sourav Pal
Director
IISER Kolkata
Mohanpur - 741 246

Director
Indian Institute of Science
Bangalore - 560 012

Chief Secretary
Government of West Bengal

Financial Advisor
MHRD, Govt. of India
Shastri Bhavan, New Delhi - 110 001

Member Director
Indian Institute of Technology Kharagpur
Kharagpur - 721 302

Secretary
Department of New & Renewable Energy,
Govt. of India
CGO Complex, Lodhi Road, New Delhi

Secretary
Ministry of Earth Sciences,
Prithvi Bhawan, Govt. of India
Opp. India Habitat Centre,
Lodhi Road, New Delhi

Prof. Supriyo Mitra
Professor, Department of Earth Sciences
IISER Kolkata

Prof. Prasanta Sanyal
Professor, Department of Earth Sciences
IISER Kolkata

Prof. Rama Jayasundar
Department of Nuclear Magnetic Resonance
(NMR)
AIIMS, Ansari Nagar, New Delhi

Prof. Arun Kumar Sinha
Former VC, Patna University (Statistics)
Patna - 800005, Bihar



Members of The Finance Committee

(As on 30.03.2019)

Chairperson and Member

Prof. (Retd.) Arvind A. Natu

IISER Pune
Former Senior Scientist,
National Chemical Laboratories (NCL)

Member

Prof. Sourav Pal

Director
Indian Institute of Science Education and
Research Kolkata
Mohanpur- 741 246

Prof. Phalguni Gupta

Director
NITTTR Kolkata -700 106

Prof. Surojit Chattopadhyay

Dept. of Chemistry
Kalyani University - 741 235

Financial Adviser

Department of Higher Education
Ministry of Human Resource Development
Shastri Bhawan, New Delhi - 110 001

Secretary

Shri. Joydeep Sil

Registrar
Indian Institute of Science Education and
Research Kolkata
Mohanpur - 741 246

Prof. Balaram. Mukhopadhyay

Registrar (Offg.)
Indian Institute of Science Education and
Research Kolkata
Mohanpur - 741 246

Members of BWC

(As on 30.03.2019)

Chairman

Prof. Sourav Pal

Director, IISER Kolkata
Mohanpur -741246

Member

Prof. Supriyo Mitra

DoFA, IISER Kolkata
Mohanpur -741246

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Shri Joydeep Sil

Registrar, IISER Kolkata
Mohanpur-741246

Shri S Pattanayak

Ex-ADG, CPWD
Bhubaneswar, Orissa

Prof. Balaram Mukhopadhyay

Registrar (Officiating), IISER Kolkata
Mohanpur-741246

Secretary

Shri. D Kasi Viswanatha Reddy

Secretary
Superintending Engineer, IWD, IISER Kolkata
Mohanpur-741246

Senate Members

(As on 30.03.2019)

Chairman

Prof. Sourav Pal
Director, IISER Kolkata
Mohanpur -741246

External Members

Prof. Animesh Biswas
Director
National Institute of Technology Rourkela

Prof. Sujata Sen
Ex-faculty, Department of Sociology
University of Kalyani, Kalyani

Prof. Aswini Ghosh
Department of Solid State Physics
Indian Association for the Cultivation of Science

Deans

Dr. Arindam Kundagrami
Dean of Students' Affairs,
Indian Institute of Science Education and
Research Kolkata

Prof. Prasanta Sanyal
Dean of Research and Development,
Indian Institute of Science Education and
Research Kolkata

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

Prof. Soumitro Banerjee
Dean of Academic Affairs
Indian Institute of Science Education and
Research Kolkata

Prof. Prasanta K. Panigrahi
Dean of International Relations and Outreach,
Indian Institute of Science Education and
Research Kolkata

Head of Departments and Centres

Dr. Satyabrata Raj
Head, Department of Physical Sciences,
Indian Institute of Science Education and
Research Kolkata

Dr. Tarun Kumar Dalai
Head, Department of Earth Sciences
Indian Institute of Science Education and
Research Kolkata

Dr. Anirban Banerjee
Head, Department of Mathematics & Statistics,
Indian Institute of Science Education and
Research Kolkata

Prof. Goutam Dev Mukherjee
Head, National Centre for High Pressure Studies
Indian Institute of Science Education and
Research Kolkata

Dr. Sayan Bhattacharyya
Head, Centre for Advanced Functional Materials
(CAFM)
Indian Institute of Science Education and
Research Kolkata

Prof. Punyasloke Bhadury
Head, Center for Climate and Environmental
Studies,
Indian Institute of Science Education and
Research Kolkata

Prof. Swadhin Kumar Mandal
Head, Department of Chemical Sciences
Indian Institute of Science Education and
Research Kolkata

Prof. Rajesh Kumble Nayak
Head, Center of Excellence in Space Sciences
Indian Institute of Science Education and
Research Kolkata

Dr. Mohit Prasad
Head, Department of Biological Sciences
Indian Institute of Science Education and
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Professors

Prof. Amit Ghosal

Department of Physical Sciences
Indian Institute of Science Education and
Research Kolkata

Prof. Annagiri Sumana

Department of Biological Sciences,
Indian Institute of Science Education and
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Prof. Arindam Mukherjee

Department of Chemical Sciences,
Indian Institute of Science Education and
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Prof. Asok Kumar Nanda

Department of Mathematics & Statistics,
Indian Institute of Science Education and
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Prof. Ayan Banerjee

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Indian Institute of Science Education and
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Prof. Bipul Pal

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Prof. Subhajit Bandyopadhyay

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Prof. Supriyo Mitra

Department of Earth Sciences
Indian Institute of Science Education and
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Chief Warden

Dr. Sanjio S. Zade

Chief Warden
Indian Institute of Science Education and
Research Kolkata

Other Faculty Members

Dr. Debasis Koley
Associate Professor, Department of Chemical Sciences,
Indian Institute of Science Education and Research Kolkata

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Indian Institute of Science Education and Research Kolkata

Dr. Supratim Datta
Associate Professor,
Department of Biological Sciences,
Indian Institute of Science Education and Research Kolkata

Librarian

Dr. Vijay Raghav Tiwari
Librarian
Indian Institute of Science Education and Research Kolkata

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BS-MS Programme
Indian Institute of Science Education and Research Kolkata

Mr. Sachin Pandey (13IP016)
IPhD Programme
Indian Institute of Science Education and Research Kolkata

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Indian Institute of Science Education and Research Kolkata

Prof. Balaram Mukhopadhyay
Officiating Registrar
Indian Institute of Science Education and Research Kolkata



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