

## **SNBNCBS-IISER Kolkata: Joint Ph.D. Programme**

In order to foster interdisciplinary research and cooperation between S. N. Bose National Centre for Basic Sciences (SNBNCBS) and Indian Institute of Science Education and Research Kolkata (IISER-K), a joint Ph.D. programme in the general area of Physical and Chemical Sciences will be conducted. Applications are invited from motivated students for admission to this programme. The selected candidates can do Ph.D. in any of the following topics under the joint supervision of faculty from SNBNCBS and IISER-K (mentioned against respective topics).

### **A. Astrophysics and Quantum information:**

- Astrophysics and Astronomy: Star-Planet Interactions and Extrasolar, Exoplanetary Systems (Prof. Soumen Mondal and Prof. Dibyendu Nandi)
- Quantum Information and Communication protocols (Prof. Sourin Das, Prof. Archan S Majumdar and Prof. Prasanta Panigrahi)

### **B. Condensed Matter Physics, Material Sciences and Mesoscopic Physics:**

- Experimental and Theoretical Study of Physical Properties Under Pressure (Prof. Goutam Dev Mukherjee and Prof. Tanusri Saha Dasgupta)
- Physics at Extreme Conditions (Dr. Swastika Chatterjee and Prof. Tanusri Saha Dasgupta)
- Magnetism of molecules and Clusters (Dr. Sangita Sen and Prof. Tanusri Saha-Dasgupta)
- Quantum Condensed Matter Physics: Strongly Correlated Electronic Systems (Dr. Siddhartha Lal and Dr. Manoranjan Kumar)
- Quantum Condensed Matter Physics: Transport in Magic-Angle Twisted Bilayer Graphene (Prof. Sourin Das and Dr. Manoranjan Kumar)
- Calculation of Excited States Towards Opto-Electronic Properties in Molecules to Materials (Dr. Mousumi Das and Dr. Monoranjan Kumar)
- Quantum Dynamics: Dynamical Calculations on the Behaviour of Materials Under the Influence of Strong Laser Field (Prof. Ashwani Kumar Tiwari and Dr. Monoranjan Kumar)
- Transport and Spectroscopy of Two-Dimensional Semiconducting Devices (Prof. Bhavtosh Bansal and Dr. Atindra Nath Pal)
- Mesoscopic Physics - Theory (Prof. Prosenjit Singha Deo and Prof. Prasanta Panigrahi)

### **C. Physical Chemistry, Chemical and Biological Physics and Soft Matter:**

- Optical Physics, Laser Spectroscopy and Applications in Biomedical and Environmental Sciences (Dr. Manik Pradhan and Prof. Nirmalya Ghosh)

- Soft Condensed Matter Physics: Exploring the Role of Disorder on Phase Transitions (Prof. Jaydeb Chakrabarti and Prof. Amit Ghosal)
- Study of Aqueous Solution Dynamics of Amphiphilic Diblock Copolymers (Prof. Ranjit Biswas and Prof. Priyadarsi De)
- Molecular Dynamics Simulation of Complex Chemical Systems to Understand Their Physicochemical Properties (Prof. Ranjit Biswas and Prof. Pradip Kumar Ghorai)
- Capturing Signatures of Biomolecular Phenomena on Hydration Dynamics with Advanced Computations and Spectroscopic Studies (Dr. Neelanjana Sengupta and Prof. Rajib Kumar Mitra)
- Computer Simulation and Molecular Thermodynamics of Molecular Recognition and Signaling in Biomolecules (Dr. Suman Chakrabarty and Dr. Susmita Roy)

**Basic qualification:** Masters in Science/Technology with First Class/Division, i.e., minimum 60% (55% for SC/ST/OBC(non-creamy)/EWS/Differently-abled candidates) in relevant branch of basic sciences (Physics, Chemistry, Applied Mathematics, Biology, Earth Science).

CSIR-NET-JRF or UGC-NET-JRF (award letter should have validity up to September 2022)  
OR

INSPIRE –PROVISIONALLY SELECTED and Award Letter should be valid up to September 2022

[The admission of INSPIRE applicants would be provisional and contingent upon acceptance of their proposal. They will be required to sign an undertaking at the time of their admission.]

Applications must be submitted through the online portal: <https://admission2.bose.res.in/>

**Last date of application:** 23rd May, 2022

**Date of Interview:** 8th-10th June, 2022

**Age Limit:** None. However, the last qualifying University examination (Masters in Science/Technology) should have been taken not earlier than 2020.

**Application Fee:**

There is a non-refundable application fee of Rs. 500/- for General category candidates & Rs. 250/- for reserved categories (including Women). The fee to be paid through NEFT / RTGS / UPI Mode only.

The account details are as follows:

Name of Account Holder	: S. N. Bose National Centre for Basic Sciences
Account Number	: 089302000000220
Bank Name and Branch	: Indian Overseas Bank, Salt Lake City Branch
Account Type	: Current Account
IFSC Code	: IOBA0000893

**Tuition fee:**

The Ph.D. degree will be awarded by IISER-K in collaboration with SNBNCBS and all admitted students need to follow the semester/tuition fee structure of IISER-K (please visit <https://www.iiserkol.ac.in/web/en/student-affair/fee-structure/#gsc.tab=0> for updated guidance on the tuition fee structure). The students may have to travel to and stay in both the institutes to carry out their research related work and Ph.D. course work.