



S.N. Bose National Centre for Basic Sciences
Sector - III, Block - JD, Salt Lake, Kolkata - 700098

Midterm Admission 2011

The S.N. Bose National Centre for Basic Sciences invites applications from students with consistent excellent academic record (First Division/Class) to apply for its Post-M.Sc.-Ph.D Programme 2011. The students who apply are expected to be motivated to make a career in Research. The programme is fully residential and the students are offered on-campus accommodations and boarding facilities. The centre charges no fee for the programme.

The centre is a premier research centre fully funded by the Department of Science and Technology, Government of India. In addition, the centre receives extramural funding from various funding agencies of India and abroad for its different research programmes. The Centre has extensive collaborative programmes with other premier institutions in India and abroad through bi-lateral exchanges in which the PhD research scholars take active part. The centre is fully equipped with state-of-art infrastructure (experimental and computational) including a digital library for advanced research in chosen areas of Physical, Chemical and Mathematical sciences. The research profiles of the members of the faculties are given the web site.

At present the centre has nearly 130 students in its Post-M.Sc-PhD Programme. The Alumni of the center are placed in academic and research sectors in India and abroad. The centre offers an excellent atmosphere for academic development of students which is continuously monitored by a thesis committee. The students in the programme have to undertake a prescribed course work and have to abide by the basic rules and regulations. A minimum scholastic standard and research output have to be maintained for continuation in the programme and the fellowship. The students can register for PhD degree in one of the following Universities: Calcutta University, Jadavpur University and West Bengal University of Technology.

POST M.Sc Ph.D PROGRAMME

Basic qualification: M.Sc in Physics including Biophysics and Chemical Physics, Chemistry, Mathematics with First Class/Division.

1. **Eligibility for Interview:** M.Sc in Physics, Chemistry, and Mathematics (including specialization in Biophysics and Chemical Physics). **Candidates awarded with CSIR-UGC-NET-JRF and INSPIRE-JRF can only apply.**
2. **Monthly Stipend:** Rs.16,000 pm for JRF. Rs.18,000 pm for SRF. After 2 years the students (JRF) are eligible to be assessed for upgradation to SRF. The assessment is done by a committee based on academic and research performance. The total fellowship period (JRF+SRF) need not exceed 5 years.
3. **Application Deadline:** The application deadline is **16th October 2011.**
4. **Interview:** The interview date is slated on **3rd November 2011.**

Departments and Area of Research

1. **Astrophysics & Cosmology:** Experimental and Observational Astronomy
2. **Chemical, Biological and Macromolecular Sciences:** Chemistry, Biophysics and Chemical Physics, Physical Chemistry.

3. Condensed Matter Physics and Material Sciences: Students of M.Sc. in Physics and related subjects, who are interested in pursuing their careers in research in theoretical and experimental Condensed Matter Physics.

- 1) (Theory) Electronic, magnetic and structural properties of transition metal oxides
- 2) (Theory)
 - 2.1 Electronic properties of Graphene and related Nanomaterials using first principles calculations.
 - 2.2 Investigation of the occurrence of band gap in Graphene under doping and multilayer formation.
 - 2.3 Application of time dependant density functional theory (TDDFT) investigation of ultrafast processes in Nanomaterials.
- 3) (Theory)
 - 3.1 Magnetism in organic materials
 - 3.2 Oxides at nanoscale,
 - 3.3 Electronic Structure, magnetism and physical transformations in geological minerals.
- 4) (Theory) Development of the tight-binding KKR augmented space recursion for accurate studies of energies and stabilities in alloys
- 5) (Experiment) Structural and magnetic aspects of Ferromagnetic Shape Memory alloys

4. Theoretical Sciences: Cosmology, Statistical Physics, Field Theory and Mathematical Physics.

The candidates have to apply preferably on-line. **Please log on to <http://bose.res.in/admission.htm> for further details.** The on-line facility will open on **26th September 2011**. Candidates applying off-line are requested to send the application:

**To
Dean (Academic Programme)
S. N. Bose National Centre for Basic Sciences
Block-JD, Sector III, Salt Lake
Kolkata 700098, West Bengal
India**

In matters of admission the decision of the Director of the Centre is final and binding.

DEAN (ACADEMIC PROGRAMME)