

School of Natural Sciences
Department of Physics
Ph.D. Admissions Announcement: Monsoon 2020

The Department of Physics in the School of Natural Sciences at Shiv Nadar University (SNU) invites applications for admission in the Ph.D. program starting from August 2020. Our graduate program is designed to serve a wide range of research interests and offers an excellent learning and research environment to motivated and ambitious students. Many of our research projects are interdisciplinary in nature, involving collaborations across multiple departments in the School of Natural Sciences, as well as other schools and research centers of the university. Diverse research interests, publications and other relevant information of our faculty members can be found at <https://physics.snu.edu.in/people/faculty>

Department is looking for candidates who are interested to perform underlined research topics (**1-12**) in which the positions are available. If interested, one may also choose from the non-underlined topics (**13 and 14**), in which positions can be offered. Candidate should mention any three following research topics during the application process (for example, Topics 1, 2, 3 or Topics 2,9,5 or Topics 8,14,7):

THEORY and SIMULATION

- Topic 1.** Computational materials science
- Topic 2.** Statistical properties of complex/chaotic systems using random matrix theory
- Topic 3.** Entropic gravity
- Topic 4.** Theoretical particle and astroparticle physics phenomenology
- Topic 5.** Astro-particle physics and cosmology
- Topic 6.** Theory of strongly correlated electron systems and novel quantum materials
- Topic 7.** Theory of soft matter physics

EXPERIMENTAL

- Topic 8.** Investigation of frustrated magnets
- Topic 9.** Soft matter physics
- Topic 10.** Physics of semiconductor materials and devices
- Topic 11.** Optical and electronic transport properties of 2D materials for energy devices
- Topic 12.** Nanostructured materials for energy storage, microfluidics and biosensors
- Topic 13.** Surface physics and nanotechnology for emerging device applications
- Topic 14.** Growth and study the opto-electronic properties of epitaxial oxide thin films

Eligibility: A candidate should have (or expected to have) a Master's degree by July 2020 in the appropriate science discipline, with a minimum of 60% marks or an equivalent grade point. Candidates who have qualified for CSIR-UGC- NET-JRF, GATE, JEST. fellowship will be preferred.

Selection Process: Shortlisted candidates will be intimated for appearing in written test and interview, which will be conducted at SNU campus in Gautam Buddha Nagar District (near Greater Noida), U.P. Candidates with CSIR-UGC NET-JRF & INSPIRE fellowships will directly appear for the interview.

Fees and Financial Assistance: Detailed information about the fee structure and the nature of assistantships are available on the website.

All full-time PhD students admitted into the program shall receive a doctoral research and teaching assistantship consisting of 100% tuition-fee waiver and 70% hostel-fee waiver. The student shall also receive a monthly stipend of ₹50,000 for the first two years, and ₹55,000 for the next two years subject to bench-marked performance. The assistantship is subject to satisfactory performance in the program evaluated continuously and compliance with all university regulations.

Application Fees: You will be required to pay a non-refundable application fees of Rs. 1,200 (One Thousand Two Hundred Only) by credit/debit card. Candidate may note that the University reserves the right to accept or reject any application based on its departmental screening criteria; hence not all application may be shortlisted for written examination. Therefore, no requests for refund of the application fee shall be entertained whether or not the candidates are called for written examination.

Application Instructions:

All interested applicant shall apply online from the link given below or on the website. Please follow the instructions carefully.

Please note that the application will not be considered without all the necessary prescribed documents and application fee.

Online submission of application will be closed on Monday, 27th April 2020. (Strict Deadline)

Tentative date of written test and interview: Wednesday 27th and Thursday 28th May 2020.

The session will start from **Monday, 3rd August 2020.**

For any other information or query, applicants may contact to:

Ms. Heena Slathia
EA to the HOD Physics,
School of Natural Sciences,
Email: heena.slathia@snu.edu.in
Telephone: 0120-3819386 / +91 9569777783

Physics Research Infrastructure

Physics research Laboratories are equipped with basic research facilities, which include clean room, thermal deposition, chemical vapor deposition, pulsed electron deposition, magnetron sputtering, spin coater, ball-milling, vacuum annealing, high temperature oven, high temperature split tube furnaces, hydraulic press, glove box, microwave furnace, fume hoods, bio-safety cabinets, cryostat, XRD, AFM, Photo Luminescence, Raman Spectrometer, PPMS, Ellipsometry, FE-SEM, UV-visible-IR spectrophotometers, I-V measurement system, polarization loop-tracer, polarization microscope, fluorescence microscope, surface profiler, viscometer, thermal conductivity, contact angle, and many others equipment within the school of natural science.

Computational facilities at SNS include a high performance IBM cluster (“*Magus*”) consisting of 60 compute nodes (plus two nodes with GPU processors) delivering a theoretical peak performance of ~30 TF. Additionally, there are several stand-alone Linux workstations that are being used for teaching and research purpose. Several software for molecular modeling, molecular dynamics, quantum chemistry, statistic learning, bioinformatics and cheminformatics, are also available.

Our library, housed in a modern 5-storey building, provides online access from anywhere in the campus, to the e-books, electronic journals and databases from APS, AIP, ACS, RSC, AMS, SIAM, IOP, Springer, Elsevier, Wiley, Nature, and others.

About Shiv Nadar University

Shiv Nadar University (SNU) is a comprehensive, multidisciplinary, research-focused and student-centric institution that is bringing a paradigm shift in higher education in India through its innovative curriculum, interdisciplinary focus, and cross-disciplinary thinking across a wide range of disciplines. The University is building an eco-system of knowledge to promote recognition of the interconnectedness of ideas, systems, and environments in the world inside the campus, and those outside it. The University has 5 Schools, 18 Departments and 6 Research Centers engaged in teaching, practice, and research in disciplines as diverse as Engineering, Humanities & Social Sciences, Management, Natural Sciences, Art, Design, Performing Arts, Communication, and Extended Education & Professional Development. The Schools offer Bachelor, Master’s, and Doctoral degrees along with multidisciplinary curriculum to enable students to explore subjects and disciplines that may be widely different from their chosen Majors.

- The University has recently been chosen as one of the select ten private “**Institutions of Eminence (IOE)**” by the Government of India.
- In the **NIRF** (Government's National Institutional Ranking Framework), SNU has been the youngest institution in the 'top 100' *Overall* list, and the score has been rising steadily. SNU ranked 52 in the *University* category, and 77 *Overall* in NIRF 2019.
- The University has been accredited with ‘**A**’ **Grade** by the National Assessment and Accreditation Council (**NAAC**), valid for a period of 5 years from 26 November 2019.
- SNU is also among a select group of green-field institutions in the country, which were awarded the prestigious **Atal Incubation Center** grant by the Niti Aayog, Government of India, in the very first round in 2017.