

School of Natural Sciences
Department of Physics
Ph.D. Admissions Announcement: Monsoon 2021

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 2021. 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 research on the following topics. The candidate should mention following any **five-research topics** according to their preference in the **statement of purpose** during the online application process.

THEORY and SIMULATION

- Topic 1.** Computational materials science
- Topic 2.** Cosmological probes of Dark Matter interactions
- Topic 3.** Particle Physics Phenomenology thought model building; flavour, dark matter, and collider physics
- Topic 4.** Time-dependent non-Hermitian quantum theories
- Topic 5.** Theoretical condensed matter physics

EXPERIMENTAL

- Topic 6.** Experimental investigation of topological quantum materials
- Topic 7.** Soft matter physics
- Topic 8.** Physics of semiconductor materials and devices
- Topic 9.** Studies of advanced materials for dielectric and energy storage applications
- Topic 10.** Multifunctional nanostructures and thin films for electrical and optical applications

Eligibility: A candidate should have (or expected to have) a Master's degree 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. Students whose Master's results (final) are awaited can still apply. However, such students must produce a proof of

minimum of 60% marks or an equivalent grade point in Master degree before taking admission in the Ph.D. program, if qualified.

Selection Process: Shortlisted candidates will be intimated for appearing in the written test and interview. Candidates with CSIR-UGC NET-JRF, DST-Inspire & DBT-JRF etc. 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 in 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.

- Fill all the mandatory fields
- **Online upload** of following document is required
 - Passport size color photograph
 - Current CV
 - All Mark sheets/Degree Certificates (10th Standard onwards)
 - Standardized Examination certificate- CSIR, UGC, GATE etc. (If applicable)
 - A Statement of Purpose

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

Online submission of application will be considered until Thursday, 10th June 2021.

The dates of written test and interview will be notified in due course.

The session will start in **August 2021**.

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 been selected as one of the 10 private “Institutions of Eminence” by the Government. In the NIRF (Government’s National Institutional Ranking Framework), SNU has been

the youngest institution in the 'top 100' Overall list, and our score has been rising steadily. In NIRF-2020, SNU ranked 56 in the 'University' category. We are 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.

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