



भौतिक अनुसंधान प्रयोगशाला, अहमदाबाद

(भारत सरकार, अंतरिक्ष विभाग), नवरंगपुरा, अहमदाबाद 380 009

Physical Research Laboratory, Ahmedabad

(Department of Space, Govt of India)

Navrangpura, Ahmedabad 380 009

PRL Junior Research Fellowships (JRFs) – 2022

Applications for Junior Research Fellowships (JRFs) at Physical Research Laboratory (PRL) are invited from highly motivated and dynamic candidates to pursue research in any of the following science domains:

- 1. Astronomy and Astrophysics:** Studies of solar system minor bodies like Comets and Asteroids in the optical wavelengths (both imaging-polarimetry and low-resolution spectroscopy), discovery and characterization of exoplanets around stars using state-of-the-art high-resolution fibre-fed stabilized optical spectroscopy using the PRL's 2.5 m aperture telescope, stellar astrophysical research at multiwavelengths (radio to optical) including M-dwarfs, symbiotic stars, morphological studies of high mass and low mass star formation regions, optical and near-IR studies of star clusters, extragalactic astronomy and transient events like novae, supernovae and GRBs, studies of radio galaxies using radio telescopes, space-based X-ray observations of neutron stars, black holes in binary systems like Be-X-ray binary systems and X-ray polarizations, space-based X-ray astronomy instrumentation for future X-ray missions, and optical and near-IR instrumentation for PRL 2.5 m telescope.
- 2. Atomic, Molecular and Optical Physics:** AMOPH Division carries out interdisciplinary research comprising of experimental and theoretical physics covering a wide spectrum of areas. It consists of several key research areas such as quantum entanglement, quantum communication, quantum cryptography, quantum imaging and quantum sensing, nonlinear optics, single-photon sources, photonic quantum computing, structured beams, generation and detection of THz radiations, theoretical studies related to the atomic clock, many-body approaches, dipole polarizability studies, astrochemical studies, shock processing of materials, reactions induced in astrochemical ices by projectiles, radiations and shockwaves, ultrafast reactions studies, femtosecond and attosecond processes, fragmentation dynamics of molecules, Photons and auger electron studies, XUV generations, crystal defect dynamics studies, radiation dosimetry, luminescence dating, earth surface processes studies.
- 3. Geosciences:** Nitrogen and carbon cycling in marine and terrestrial environments, isotopic fingerprinting of waters of India, palaeoclimate studies using marine and terrestrial proxies, marine geochemistry, chemical weathering and climate, palaeo-monsoon and desertification on various time scales, spatial and temporal evolution of various landforms of India, the evolution of proterozoic sedimentary basins of India, subduction zone volcanism, catastrophic/extreme events, mass extinctions and Earth surface processes, ambient aerosol chemistry over land and oceans.
- 4. Theoretical Physics:** Quantum condensed matter physics, including topological materials, strongly correlated electronic system, itinerant magnetism, unconventional superconductivity, neutrino physics, dark matter phenomenology, CP violation, baryogenesis, artificial intelligence and machine learning techniques in fundamental physics, heavy flavour physics, effective field theories, strong interaction physics and quark-gluon plasma, precision calculations in strong and electro-weak interaction physics, studies of extended gauge and space-time symmetries.

Candidates from disciplines of any branch of Physics, Engineering Physics, Space Physics, Atmospheric Sciences, Chemistry, Geology, Geophysics, Earth Sciences, Environmental Science, Remote Sensing are eligible to apply. Candidates must have Bachelor's and Master's degrees in Science or Engineering with at least a first-class (60%) or equivalent grades at both Bachelor's and Master's levels and must have qualified in any national exam conducted by CSIR-UGC-NET, JEST, GATE and UGC-NET (Env. Sci.) with a valid score.

A Candidate must be an Indian citizen and should have studied at recognized Universities/Institutes in India. The upper age limit is 28 years as on 1 July 2022.

More details on research topics and the web portal for applying online can be accessed from <https://www.prl.res.in/prl-eng/phd>. Apply online during **25 April 2022 to 20 May 2022**. Offline/Online interviews for the candidates who are screened in will be held on 6, 7 and 8 June 2022.

It is the sole responsibility of the candidate to ensure fulfillment of the eligibility criteria as notified. The candidate should fully comply with the procedural requirements and time limits stipulated for submission of the online application. Any deviations from the above would result in the cancellation of candidature, and any representation, whatsoever, on such matters, will not be entertained.

DEAN, PRL