



Advt. No. 04/2024

**Position available for Junior Research Fellowship**

Applications are invited from highly motivated and eligible candidates for the project entitled “Modelling of Dust Devil/Storm, Variability and Possible Existence of Lightning on Mars” under the Core Research Grant (CRG) scheme funded by Science and Engineering Research Board (SERB), Department of Science and Technology (DST), at Physical Research Laboratory, Ahmedabad. The maximum duration of the project is three years and the post is co-terminus with the project duration.

Name of the Post	No. of Vacancy	Age as on last date of application	Qualifications/ Experience	Fellowship per month (Consolidated)
Junior Research Fellowship (JRF)-SERB-CRG-Project	1 (ONE)	Maximum 26 Years	1. M.Sc. in Physics/Atmospheric Science/ Electronics with minimum 60% marks 2. CSIR/UGC NET including lectureship or GATE or JEST  <b>Desirable:</b> Good knowledge of programming languages, MATLAB and some experience on numerical simulations	Rs. 31,000/- + HRA for first two years and Rs 35,000 + HRA for 3 <sup>rd</sup> year.  HRA is as per prevailing rates for the place of work

Interested candidate may send a letter of motivation/statement of purpose, the latest Curriculum Vitae in the prescribed format only, given in Annexure I (below) and the scanned copies of all the relevant documents in a single file, through e-mail (with subject “SERB-CRG-JRF”) to the project investigator:

Prof. Jayesh Pabari  
Planetary sciences Division  
Physical Research Laboratory  
Navrangpura, Ahmedabad- 380 009  
E-mail: [jayesh@prl.res.in](mailto:jayesh@prl.res.in)

Last date of receipt of applications: **29 February 2024**

**Terms & Conditions:**

1. The above position is purely contractual and co-terminus with the project.
2. Initial appointment is for one year, which is extendable up to three years upon successful annual evaluation of the candidate.
3. Only shortlisted candidates will be intimated for an online interview.
4. Participation in selection process is subject to possessing relevant original documents substantiating online application submitted by the candidates.
5. Selected candidate may be encouraged to register for a Ph.D.

**Project Summary:** Dust is a major constituent in any planetary system and it is found everywhere. In case of Mars, dust devils/storms occur near the surface mostly in the summer of Southern hemisphere and some of them are global in nature. However, electrodynamics model of dust devil/storm and long term variability and repeatability of dust devils/storms on Mars is not yet understood completely. This leads to many scientific questions like whether the cause of dust devils/storms repeats itself, is there any dependence on solar cycle, whether dust remains in the environment continuously, if the lightning due to devils/storms on Mars should be detectable any time etc. Since, the lightning or electrical discharge on Mars is a discovery awaited and its basic cause of generation is whirlpool motion of dust particles; the investigation of dust devils/storms on Mars is essential by modelling and data analysis. Further, the study of planetary atmosphere under the influence of dust is also necessary. Looking at the existing literature, some research gaps exists in the current understanding. This project provides an opportunity to address them through development of comprehensive models and analysis of available observations, that can emerge as outcomes of this project. Further, it can also help to gainfully interpret the data from future mission to Mars.