

# ISNET's Call for Space Experiments: Pakistan's Astronaut Mission on the China Space Station



Inter-Islamic Network on Space Sciences & Technology  
Réseau Inter-Islamique Des Sciences Spatiales Et De La Technologie  
الشبكة البيئية الاسلامية حول علوم و تكنولوجيا الفضاء

# ISNET's Call for Space Experiments: Pakistan's Astronaut Mission on the China Space Station

## 1. Introduction

- a. In line with our mission to foster collaboration among ISNET member countries and promote innovation in space science, ISNET is offering an exclusive opportunity for member states to submit space experiments that will be conducted aboard the China Space Station (CSS) by Pakistan's first astronaut.
- b. This initiative opens an extraordinary door for students and young researchers to witness their experiments performed in the microgravity environment of space.

## 2. Objectives

- a. **Promote Regional Collaboration in Space Research:** Strengthen the collaborative ties between ISNET member countries by encouraging joint space research initiatives and fostering a shared interest in space exploration.
- b. **Encourage Innovation in Space Science:** Invite innovative proposals for physics experiments that contribute to scientific knowledge and can be conducted in the unique environment of space, particularly in microgravity conditions.
- c. **Enhance Scientific Expertise and Capabilities:** Improve the scientific and technical expertise of ISNET member countries by engaging in high-level space research, thereby enhancing their capabilities in space science and technology.
- d. **Promote Education and Public Engagement:** Use the initiative as a platform to promote education in space sciences within member countries and to generate public interest and excitement about space exploration.

## 3. Experiment Theme.

ISNET shall be soliciting proposals for intermediate level science experiments that can be visible to confirm phenomena in Zero-G. Participants shall be requested to describe the hypothesis/scientific basis as mathematically or logically as possible.

## 4. Process.

Proposals on the prescribed form are requested to be submitted on [REDACTED]. Member states will work on the screening of proposals according to selection method. After feasibility assessments by member states, the final selection of experiment will be determined by Pakistan Space and Upper Atmosphere Research Commission (SUPARCO).

## 5. Application Requirements.

Three proposals will be selected but the number may change later.

- a. The activity must be completed inside CSS.
- b. The activity should be low cost, small scale level and manageable by the Astronaut. Describe the procedure simply and concisely.
- c. As a rule, the activity should be able to be carried out by one crew member.
- d. Proposal must not have been previously conducted on CSS.
- e. Activities will be recorded using a high-resolution camera. The footage will be downlinked to earth and distributed to those involved.
- f. Proposals that could be seen to be linked to the financial gain of a specific group or organization will not be accepted.
- g. Proposals can be accepted from individuals and teams.
- h. The exercise machines onboard the CSS are not available for use.

## 6. Eligibility.

Student(s) (individual or a group) up to graduate level from ISNET member states colleges/ universities are eligible to apply.

## 7. Schedule (tentative)

- a. End of Oct 2024 : 1<sup>st</sup> Call for Experiments
- b. Nov 2024 : Webinar on Experiments Requirements
- c. Dec 2024 : 2<sup>nd</sup> Call for Experiments
- d. 27 Jan 2025 : Experiments Submission Deadline
- e. Feb 2025 : Shortlisting by Member States Focal Point Organizations
- f. April 2025 : Final Selection
- g. 2026 : On-orbit experiment (date to be determined by the on-orbit schedule).

## 8. Points to Consider.

If an experiment is deemed to pose a danger to the CSS or if it is too difficult to conduct due to restrictions on astronaut activities, it may not be possible to carry it out. When proposing an idea, please check the following points to ensure that they do not apply.

**a. The following activities are considered to be unsafe onboard the CSS:**

- (1) Use of dangerous materials/objects
- (2) Release of large amounts of water (1 liter or more) inside CSS cabin
- (3) Release of gases that cannot be processed on the CSS
- (4) Scattering of tiny objects, such as nuts and bolts, powder, and pieces of paper
- (5) Spinning of objects with a large mass at high-speed
- (6) Handling of fragile objects (e.g. glass)
- (7) Handling of objects with sharp edges

**b. The following activities are considered to be impractical onboard the CSS:**

- (1) Work that takes a long time for crew members to complete
- (2) Activities that infringe on the rights and privacy of crew members
- (3) Activities that require stopping the circulation of air inside the cabin for a long time
- (4) Activities that block the crew's emergency escape route (closing hatches, etc.)

## 9. Preparing the Proposal.

As a rule, the description in the proposal should be written in English because it will go through an international review process with participating countries. Form is placed as [Attachement-1](#), that includes the following requirements: -

**a. Applicant Affiliation**

**b. Experiment Title**

**c. Abstract**

**d. Hypothesis / Theory**

(1) Hypothesis

(2) Schematic Diagram

**e. Mathematical / Theoretical Supposition / Scientific Basis**

**f. Items Required for Implementation (including launch items)**

**g. Implementation Procedure**



## 10. Terms and Conditions.

Applicants shall be deemed to have agreed to all of the following.

### a. Management of Application Content

- (1) The rights to modify, implement, and use the results of the proposal for public and/or educational purposes belong to SUPARCO.
- (2) Images and videos and personal information submitted with the application may be published on the SUPARCO/ISNET website.
- (3) The submitted idea may be used for public and/or educational purposes, even if it is not selected.
- (4) If the requirements are not met, the proposal may be dropped even after it has been announced.

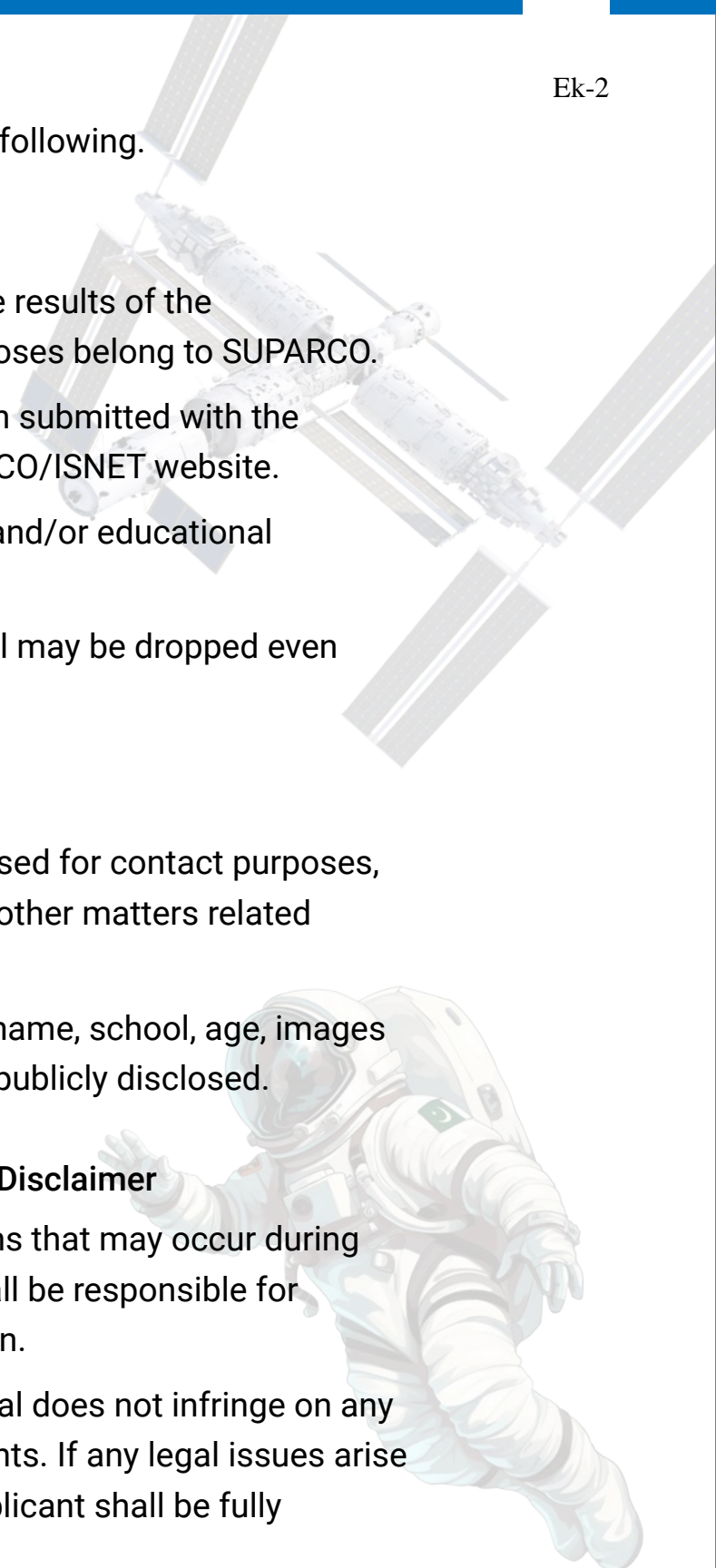
### b. Privacy Policy

- (1) The collected personal information will be used for contact purposes, for publicizing the selection results, and for other matters related to the event.
- (2) However, the personal information such as name, school, age, images and / or photos taken for this event may be publicly disclosed.

### c. Responsibilities of the Applicant and SUPARCO's Disclaimer

- (1) SUPARCO shall not be liable for any problems that may occur during participation in this event. The applicant shall be responsible for resolving any possible problems on their own.
- (2) The applicant must ensure that their proposal does not infringe on any legal rights, such as intellectual property rights. If any legal issues arise in relation to the submitted material, the applicant shall be fully responsible for resolving them.

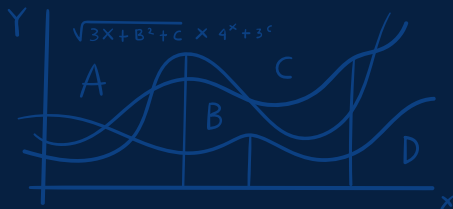
### d. Guidelines are subject to modification.





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in Collaboration with



**SUPARCO**

**Pakistan Space & Upper Atmosphere Research Commission**

$$\begin{aligned} x &= \frac{\sqrt{B^2 + C^3 + Z}}{2^3 + 4^x \sqrt{2B+C}} \\ &= \frac{\sqrt{BZ^3 + 4 + Z}}{\sqrt{2B+C+D}} \\ &= \sqrt{B^2 + 4 + Z + D} \end{aligned}$$