

Online Training cum Summer Internship Program on

Space Radiation Shielding & Spacecraft Protection

organized by

Department of Physics, Malaviya National Institute of Technology Jaipur

Prof. N. P. PadhyDirector, MNIT Jaipur

Patron

Dr. Kamlendra AwasthiHead, Department of Physics *Chair of Program*

Dr. Kavita LalwaniAssistant Professor, Physics *Convener*

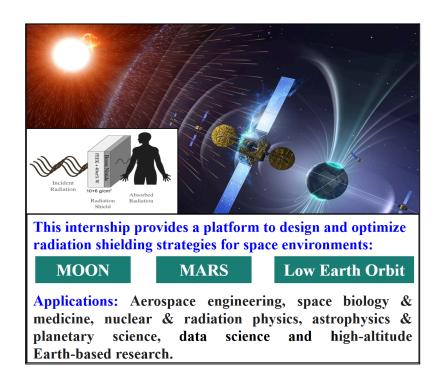
Online Training cum Summer Internship Program on Space Radiation Shielding & Spacecraft Protection

Duration: June 5 to July 4, 2025 (4 weeks, 2 hours each day: 2 pm to 4 pm)

Mode: Online

Target Audience: Undergraduate, Postgraduate Students, Faculty, and Industry Professionals in multidisciplinary fields of science and Engineering (**No Prerequisite required**).

Program Overview: This comprehensive 4-week online program is designed to provide in-depth knowledge and practical skills in space radiation shielding and spacecraft protection. Participants will explore the space environment, cosmic radiation, and satellite protection mechanisms through a blend of theoretical learning and hands-on Python programming. The program aims to empower students and professionals with the computational skills necessary to simulate radiation shielding models, inspired by NASA's HZETRN (High-Z and Energy Transport) framework. Successful completion will be rewarded with a certificate to support academic and professional advancement in space science and technology.



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Program Highlights:

- Hands-on experience in Python programming for space applications.
- Simulation of space radiation shielding models.
- Real-time computational projects.
- Guidance from experienced mentors (IITs, NITs, and reputed universities).
- Certificate of completion.
- Awards for outstanding project execution and active participation.

Training Modules:

- 1. **Introduction to Space Physics:** Solar wind, CMEs, cosmic rays, Earth's magnetosphere, Van Allen belts.
- 2. **Data Visualization & Interpretation:** Techniques to interpret space data from space organizations (NASA/ISRO).
- 3. **Fundamentals of Space Radiation:** Ionizing radiation, LET, and radiation effects on spacecraft electronics.
- 4. **Python for Space Applications:** Basics of Python, NumPy, Matplotlib for data visualization and simulation.
- 5. **Modeling Radiation Shielding:** Simulation of shielding using simplified HZETRN-like models.
- 6. **Project Work:** Data-driven modeling or simulation of a space environment challenge using Python.
- 7. **AI Integration (Introductory):** Basic machine learning concepts for space data classification or trend prediction.

Registration Details: Registration Fee: INR 5000 + 18% GST (**Total: ₹5900**) (Non-refundable)

Fill registration form: https://forms.gle/JqWZaFR67OdyMJz18

The applicable registration fee must be deposited online as per the details below:

• **Payment Mode:** NEFT/IMPS

o Bank Name: ICICI Bank Ltd., MNIT Jaipur

• Account Name: Registrar (Sponsored research) MNIT Jaipur

Account No: 676801700388
 IFSC Code: ICIC0006768
 Branch: MNIT Campus, Jaipur

Registration deadline: 31/5/2025, 5PM

For any query, contact at Email: internshipatmnit@gmail.com, Call us at: 9250913499

OR WhatsApp @ https://alvo.chat/61Cz