Advertisement for Admission to Ph.D. Programme

May 2023

Department of Astronomy, Astrophysics and Space Engineering

Indian Institute of Technology Indore, Simrol Campus, Khandwa Road, Indore – 453552

Ph.D. Admissions/2023

Applications are invited from highly motivated and research-oriented candidates for admission to Ph.D. Program in the **Department of Astronomy, Astrophysics and Space Engineering (DAASE), IIT Indore**. Please refer to the Ph.D. Advertisement of the institute available at http://academic.iiti.ac.in/phdadvt.php for details. Applications are invited for **All categories** in this round.

Kindly refer to the PhD Advertisement of the Institute available at http://academic.iiti.ac.in/phdadvt.php for the **Minimum Educational Qualification and Qualifying Examination.**

Relevant Discipline: Physics, Applied Physics, Astronomy, Astrophysics, Space Science and Engineering, Mathematics, Applied Mathematics, Statistics, Applied Statistics, Earth and Atmospheric Science and Engineering, Remote Sensing, Software Engineering, Information Technology, Data Science, Data Analytics, Engineering Physics, Aerospace Engineering, Aeronautics, Electronics and Communications Engineering, Electrical Engineering, Computer Science and Engineering, Civil Engineering, Mechanical Engineering, Metallurgy Engineering and Materials Science, Biophysics, Biotechnology, Bioinformatics, Chemistry, Chemical Engineering.

Application Procedure: Kindly refer to the main Ph.D. Advertisement of the Institute available https://academic.iiti.ac.in/phdadvt.php. Outstanding candidates will be shortlisted and called for **a written test and interview via email**.

Last date submitting online application:	**15 May 2023**
Written Test Date:	**23 May 2023**
Interview Dates:	**23, 24 and 25 May 2023 ***

*** The written test and interview process may take three days.**

PhD Admission procedure in DAASE (two-stage): Candidates will be invited for an In-person written test at the Department of Astronomy, Astrophysics and Space Engineering, IIT Indore. The shortlisted candidates for In-person interviews will be notified after the written test. The written test and In-person interview will be conducted following the COVID 19 protocols.

Online Application Form (Compulsory): Candidates **MUST** apply **ONLINE** through the portal: https://academic.iiti.ac.in:8443/nregistration.jsp **All applications received by 15 May 2023 23:59 hours will be considered for this round of Entrance Examination and**

Interview. Please note an application with an incomplete or not properly filled application form or lack of self-attested copies of supporting documents (found in any stage) will not be considered for further processing.

Recommendation Letters (Compulsory):

The candidates should also arrange to send **TWO** letters of recommendation (in the specified format available **in the application portal**) from the referees listed in the application form. These letters should be **sent** by the referees directly to the email ids: **pc-phd-aase@iiti.ac.in**, **dpgc-aase@iiti.ac.in,** **and** **aase-office@iiti.ac.in** **before the application deadline which is 15 May 2023. Please make sure that one of the referees is a faculty/scientist from the last institution/university that you have attended. Please note your referees will not receive any automatic email notification for the recommendation letter.**

Application Fee:

Please refer to the main PhD Advertisement of the Institute available at http://academic.iiti.ac.in/phdadvt.php

Research Areas

The Department of Astronomy, Astrophysics and Space Engineering (DAASE) at IIT Indore is a unique department among all IITs. It offers a dedicated platform to pursue research in astronomy, astrophysics and space science and engineering, and related areas. The DAASE is seeking applications for Ph.D. positions under the following four broad areas of research:

S.No	Area of Research	Topics
1.	**Astronomy and Astrophysics**	Observational and Computational Cosmology with Statistical Inference, Galaxy Clusters and Large Scale Structures, Computational Astrophysics, Neutron Stars, Pulsars and Black Holes, Transients, Radio and X-ray Observations, Galaxy and Interstellar Medium, Dark matter distribution in galaxies, Alternative theories to dark matter, Star and Planet Formation, Exoplanets, High Energy Astrophysics, Gamma-ray Astronomy, Multi-wavelength & Multi-messenger Astronomy, Machine Learning and Big Data applications.
2.	**Space Sciences and Engineering**	Ionosphere & Satellite Communication/Navigation, Spacecraft & Payload Control, Space Weather and Payload Design
3.	**Earth and Atmospheric Sciences**	Climate change, Atmosphere and Cloud Physics, Atmospheric Remote Sensing, Remote Sensing and Radar, Multi-sensor approaches for ecosystem change detection, Fusion of SAR and Lidar for Earth Observation, Remote Sensing Technologies and Applications, Ionospheric Research with ML applications.
4.	**Instrumentation in Astronomy, Atmospheric and**	Signal and Image Processing, Instrumentation related to Radio Astronomy and Space Payloads, Antenna Design, Simulation and Fabrication with Machine Learning applications. Development of

	Space Sciences	ground-based radar and SAR system

Our faculty members are actively involved in the international mega-science project the **Square Kilometre Array (SKA), PLUTO code, Navigation with Indian Constellation (NavIC), SEAMS, TianLai** and related research. Our faculty members and students are extensively using national/international facilities like the **ASTROSAT, uGMRT, VLA, ATCA, SWIFT, NuStar, FACT, MAGIC, NICER, XMM-Newton, Chandra X-ray Observatory, Fermi-LAT, LOFAR, IceCube Neutrino Observatory, Himalayan Chandra Telescope, ESA Rosetta, NASA spacecraft observations (e.g. ACE, WIND, Van Allen Probes, GOES, THEMIS etc.)** and will be actively involved in upcoming projects e.g. the **Thirty Meter Telescope, the James Webb Space Telescope (JWST), EUCLID, MACE, Aditya-L1 mission, Large Synoptic Survey Telescope, and CONCERTO-APEX**.

Applicants are strongly advised to visit the departmental website (https://aase.iiti.ac.in/), faculty (https://aase.iiti.ac.in/?page_id=17) and PhD student profiles (https://aase.iiti.ac.in/?page_id=21) and homepages of individual faculty members before applying for the Ph.D. programme:

- **Dr. Manoneeta Chakraborty**: http://www.iiti.ac.in/people/~manoneeta/
- **Dr. Saurabh Das**: http://www.iiti.ac.in/people/~saurabh.das/
- **Prof. Abhirup Datta**: http://iiti.ac.in/people/~abhirup.datta/
- **Dr. Unmesh Khati:** http://people.iiti.ac.in/~unmesh.khati
- **Dr. Suman Majumdar**: http://www.iiti.ac.in/people/~sumanm/
- **Dr. Savyasachi Malu**: http://www.iiti.ac.in/people/~siddharth/
- **Dr. Narendra Nath Patra:** http://people.iiti.ac.in/~naren
- **Dr. Amit Shukla**: https://sites.google.com/iiti.ac.in/welcome/home
- **Dr. Bhargav Vaidya**: http://www.iiti.ac.in/people/~bvaidya/

For any queries please contact:

Dr. Amit Shukla (Coordinator, PhD Program, DAASE) ;
Department of Astronomy, Astrophysics and Space Engineering
Indian Institute of Technology Indore,
Khandwa Road, Simrol
Indore 453552
Email: **pc-phd-aase@iiti.ac.in, dpgc-aase@iiti.ac.in , aase-office@iiti.ac.in,**