المعهد الهندي للتكنولوجيا دلهي
أبوظبي

INDIAN INSTITUTE OF TECHNOLOGY DELHI
ABU DHABI

# IIT Delhi - Abu Dhabi

# Ph.D. Admissions

in the area of Energy and Sustainability

**Applications Open only for Full-Time (with Sponsorship)**

**Semester 1, 2025-26**

Invitation to pursue

# Ph.D. at IIT Delhi - Abu Dhabi (IITD-AD)

The establishment of the Indian Institute of Technology (IIT) Delhi - Abu Dhabi as the first international branch campus of IIT Delhi marks a significant stride in its global outreach and underscores the deepening educational partnership between India and the UAE.

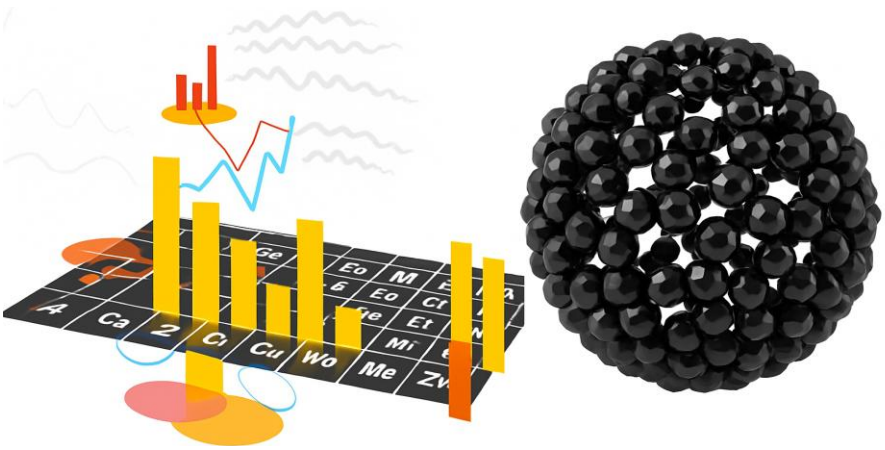
Starting its operations in January 2024 with an M.Tech. in Energy Transition and Sustainability, IITD-AD has started its Inaugural **Ph.D. Program** in **Energy and Sustainability** in January 2025. IITD-AD also offers B.Tech. programs in Computer Science & Engineering, Energy Engineering, and Chemical Engineering. With its strategic location, future-forward programs, and the esteemed IIT Delhi heritage, the Abu Dhabi campus is poised to become a leading hub for engineering, technology, and research in the region, nurturing a new generation of global innovators and leaders.

**1ST** Asian University Ranking Southern Asia (QS Ranking 2025)

**26TH** Worldwide Ranking in Engineering & Technology (QS Rankings 2025)

https://www.topuniversities.com/university-subject-rankings/engineering-technology

**Indian Institute of Technology Delhi (IIT Delhi)** is one of India's highest-ranked academic institutions. Since its inception, over 60,000 students have graduated from IIT Delhi in various disciplines, including Engineering, Physical Sciences, Management, Humanities, and Social Sciences. From visionary tech entrepreneurs reshaping industries to influential policymakers guiding national agendas and groundbreaking researchers pushing the boundaries of knowledge, IIT Delhi's alumni are a force of transformative leadership across the diverse fields, consistently driving innovation.



## About the Program

The global imperative to decarbonise the fossil fuel sector and revolutionize industrial practices has positioned in-depth research across energy and sustainability as a paramount necessity. Navigating the multifaceted challenges of the energy transition, encompassing its inherently multidisciplinary nature, the intricate pathways for decarbonizing hard-to-abate industries, and the critical demand for economically viable and environmentally responsible solutions, requires comprehensive understanding and in-depth investigations.

Recognizing the catalytic role of research in overcoming these hurdles, the faculty at IIT Delhi and IIT Delhi – Abu Dhabi have established state-of-the-art research programs in the area of Energy and Sustainability. Their collective expertise spans innovative chemical processes, the development of sustainable materials, a diverse spectrum of energy technologies, intelligent electricity networks, sophisticated computational simulations, and the transformative application of artificial intelligence for optimizing complex energy systems.

Research at IITD-AD directly confronts the core challenges of this transition, with focused investigations aimed at enhancing efficiency, minimizing environmental impact, ensuring grid stability, and accelerating the adoption of clean energy solutions. By fostering robust international collaboration and strategically leveraging regional insights, our Ph.D. program is meticulously designed to cultivate essential expertise in the energy and sustainability sector, empowering students with high-calibre research skills, an unwavering work ethic, and the capacity for significant contributions to a decarbonised future.

The Ph.D. program at IIT Delhi – Abu Dhabi is offered in three modes: Full-Time (with Assistantship), Full-Time (with Sponsorship), and Part-Time. Please note that **currently, applications are open only under the Full-Time (with Sponsorship) category**. Full-time Ph.D. students in this category are supported by their employer or any another organization, these full-time students are fully engaged in their research program, having secured a leave of absence for a minimum of three years. While they do not receive a stipend or general scholarship from IIT Delhi - Abu Dhabi, they may be eligible for partial tuition waivers. This category caters to students whose advanced studies are supported by an external sponsor.

# Program Structure

The Ph.D. program at IIT Delhi – Abu Dhabi is structured around the following three key components:

## 1. Coursework*

Ph.D. students are required to complete coursework based on their previous qualifying degree, as follows:

| Qualifying degree at the time of admission | Minimum number of credits required as course work (relevant to research topic) |
|---|---|
| 2 years, M.Tech., M.S., M.S.(R), M.E., 5 year Integrated M.Tech., or equivalent) | 6 |
| 4 year, B.Tech., B.S., B.E. or equivalent | 12 |
| 2 years M.Sc. (after 3 years of B.Sc.), 5 year integrated M.Sc., or equivalent | 12-20 |

Additionally, students must complete a course on communication skills/research writing.

***Note:** Coursework requirements may vary depending on the specific research problem and area.

## 2. Comprehensive Examination and Research Plan

Ph.D. students must appear for a written comprehensive examination related to their research topic and present a research plan to their research committee within 18 months (for Full-Time (with Sponsorship))

## 3. Research Work

The core of the Ph.D. program involves the student conducting their research. The student research committee evaluates the student's progress every semester. A typical Ph.D. project requires a total of 4-5 years to complete. Under special circumstances, the maximum allowed duration for the Ph.D. is 7 years.

**Explore the prospective Ph.D. Projects here**

## Admission Process

Candidates are encouraged to apply for the program irrespective of their preference for the category. The admission process is multi-stage and will consist of the following:

(a) Shortlisting, based on the Eligibility Criteria

(b) An interview, which may have multiple stages. The interview committee may seek recommendation letters from the referees in arriving at its final decision.

Once a candidate is selected, then her/his entitled fee waiver will be considered separately. The relevant details for the admission process are as follows:

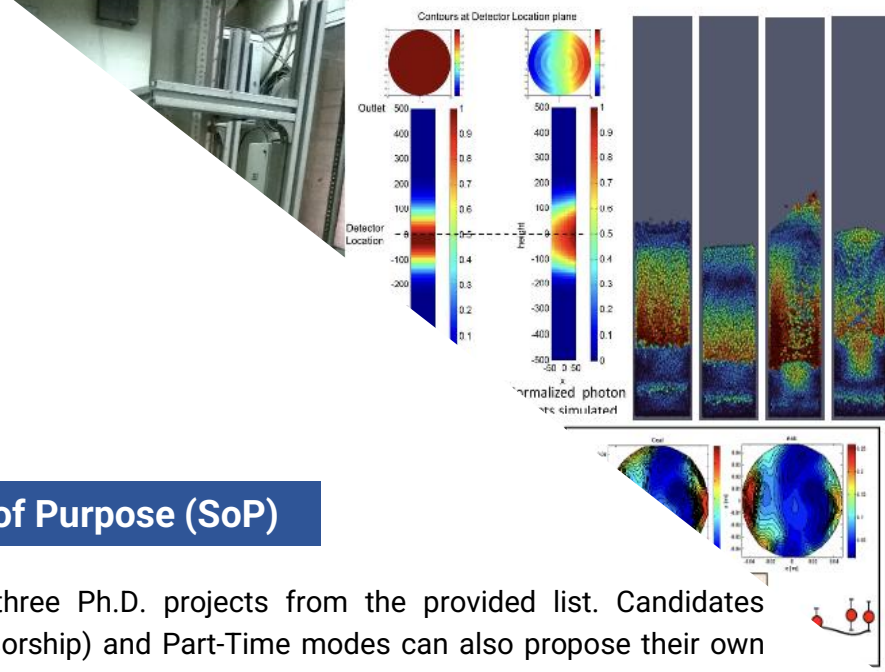
## Eligibility and Admission Requirements

| | |
|---|---|
| Category of Application | Full-Time (with Sponsorship) |
| Qualification Degree# and Cumulative Grade Point Average (CGPA)<br><br># Candidates in final semester can also apply | Applicants must have completed a Master's degree (2 year M.Tech., M.S., M.S.(R), M.E., 5 year Integrated M.Tech., or equivalent) with a minimum Cumulative Grade Point Average (CGPA) of 3.0 on a 4.0 point scale, or equivalent (7.50 on a 10.00 point scale, or 75% aggregate marks in case marks are offered on graduation), in a discipline relevant for the doctoral degree (as listed in the project briefs).<br>OR<br>Academic distinction in a relevant discipline at the Bachelor's degree (4 year B.Tech., B.S., B.E., 5 year Integrated M.Sc. or equivalent) with a CGPA of at least 3.5 on a 4.0 point scale (or 8.75 on a 10.00 point scale, or 87.5% aggregate marks in case marks are offered on graduation) will also be considered, in a discipline relevant for the doctoral degree (as listed in the project briefs). |
| Standardized Test | Not Applicable |
| Work Experience Requirement | Minimum two years post qualification |

## List of Documents Required

| |
|---|
| Qualification degree and Transcript clearly mentioning the overall CGPA |
| Statement of Purpose (SoP) |
| Experience Certificate |
| Sponsorship Certificate/Letter** |
| No Objection Certificate** |
| Upon selection after the final round, the successful candidate will be required to provide copies of their valid passport and national identification card (or Emirates ID / Aadhar Card) |

** In case a sponsorship certificate/letter, or a no-objection certificate is not available at the time of application or interview, you may provide an undertaking stating that the same would be submitted at the admission, if selected.




## Submission of Statement of Purpose (SoP)

Candidates can choose up to three Ph.D. projects from the provided list. Candidates applying in Full-Time (with Sponsorship) and Part-Time modes can also propose their own Ph.D. project based on the need and relevance of their Industry.

The candidates must submit a Statement of Purpose, with the following sections:

a. Why do you wish to pursue a PhD program at IIT Delhi - Abu Dhabi? What are your expectations from the campus and the academic program, if selected? (maximum 200 words)

b. In the order of priority for each Ph.D. project (select up to three of the listed projects), write a summary of a maximum of 400 words addressing the following questions: What is your understanding of the Ph.D. problem selected, and what approach would you adopt to research the problem?

How do your background and interests make you a suitable candidate for working on this Ph.D. project?

# List of Ph.D. Projects, Semester 1, 2025-26

**Project 1:** Catalytic Transformation of Bio Renewable Platform Molecules into Sustainable Aviation Fuels and high-Value Chemicals
(Proposed Faculty Supervisors: Nidhi Jain and Mohammad Ali Haider)

**Project 2:** AI-driven Photonic Metasurfaces for Environmental and Healthcare Applications (Proposed Faculty Supervisors: Joby Joseph, Hariprasad Kodamana, Amit Agrawal (University of Cambridge, UK)

**Project 3:** Potential of Reducing Embodied and Operational Carbon and Energy in buildings (Proposed Faculty Supervisors: Shashank Bishnoi, Dibakar Rakshit)

**Project 4:** Unlocking Decarbonization Pathways for Core Industrial Sectors
(Proposed Faculty Supervisors: Ashu Verma, Shantanu Roy)

**Project 5:** Physics-Based Modelling of Lithium-Ion Batteries for Electrochemical and Thermal Optimization (Proposed Faculty Supervisors: Mohammad Ali Haider, Dibakar Rakshit)

**Project 6**: Electrolyte Engineering for Optimised Gas Bubble Management and Enhanced Efficiency in Industrial-Scale Water Electrolysis
(Proposed Faculty Supervisors: Shantanu Roy, Prapanch Nair)

**Project 7**: High-Throughput Screening of Materials for Carbon Capture and Utilisation Using Molecular Simulations and Machine Learning (Proposed Faculty Supervisors: M. Ali Haider, Hariprasad Kodamana)

**Project 8:** Conceptualizing a Floating Refinery and its Process Units using Hexapod Mechanics and Multiphysics Modelling (Proposed Faculty Supervisors: Shantanu Roy, Dibakar Rakshit )

**Project 9:** Data-driven Approaches for Real-time Optimal Power dispatch in Distribution systems (Proposed Faculty Supervisors: Ashu Verma, Hariprasad Kodamana)

**Project 10:** Learning to Stabilize: ML-Enhanced Frequency Control in Renewable Power Systems (Proposed Faculty Supervisors: Ashu Verma, Priyank Srivastava)

**Project 11:** Optimal Designs of Structured Catalytic Surfaces for Syngas to Liquids Production for aiding the Energy Transition (Proposed Faculty Supervisors: Shantanu Roy, Hariprasad Kodamana, Manoj Ramteke (IITD) )

**Project 12:** Modelling of Electrified Structured Reactors for meeting Net Zero Targets (Proposed Faculty Supervisors: Shantanu Roy, Ashu Verma)

**Project 13:** Development of Energy Management Platform for Combined Power Dispatch of Electricity and Hydrogen Production in a Microgrid with Capabilities to Provide Ancillary Services (Proposed Faculty Supervisors: Ashu Verma and Avanish Tripathi (IITD))

**Project 14**: Decarbonizing the Fossil Fuel Sector Through Life Cycle Assessment and Materials Development for High-Temperature Fuel Cells (Proposed Faculty Supervisors: M. Ali Haider, Shantanu Roy)

**Project 15:** Integrating Battery Energy Storage Systems for Grid Stability in the UAE: Addressing the Water-Energy Nexus and Desalination Demand with Renewable Energy (Proposed Faculty Supervisors: Ashu Verma, Dibakar Rakshit, B.K. Panigrahi)

**Project 16**: Identifying Novel and Optimal Routes for Decarbonisation Using Large Language Models (LLMs) (Proposed Faculty Supervisors: Mohammad Ali Haider, Shantanu Roy, Hariprasad Kodamana,)

**Project 17:** Climate-Justified Process Optimization Using Deep Learning (Proposed Faculty Supervisors: Mohammad Ali Haider, Hariprasad Kodamana, Shantanu Roy, Manoj Kumar Ramteke (IITD))

**List of Ph.D. Projects, Semester 1, 2025-26**

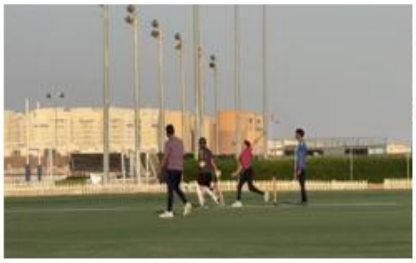
## Campus Living

IIT Delhi - Abu Dhabi offers convenient on-campus housing for both male and female students. Single rooms are available at AED 2000 per month, while double-sharing options cost AED 1000 per student monthly; these fees are payable by the student. Notably, residence fees are waived for UAE Nationals. Subsidized meal plans are also provided in the dormitories at an additional cost. To support student life, the campus features dining options, laundry services, a library, a fitness centre, a student lounge, and comprehensive security.

## Life in Abu Dhabi

Abu Dhabi, the vibrant capital of the UAE, offers a compelling and enriching experience for both domestic and international students. This modern metropolis seamlessly blends a rich cultural heritage with cutting-edge innovation, providing a safe and welcoming environment for individuals from around the globe. Imagine exploring stunning architectural marvels like the Sheikh Zayed Grand Mosque, immersing yourself in local traditions at bustling souks, or enjoying world-class entertainment and leisure facilities. With its year-round sunshine, pristine beaches, and diverse culinary scene, Abu Dhabi provides a high quality of life and a unique opportunity to experience the dynamic culture of the Middle East.

Beyond the captivating lifestyle, Abu Dhabi is a rapidly growing global hub with a strong focus on education, research, and technological advancement. Choosing Abu Dhabi for your Master's or Ph.D. studies means not only gaining a world-class education but also immersing yourself in a dynamic and forward-looking environment with endless possibilities for personal and professional growth.






## Fee and Scholarships

### Tuition Fee: AED 80,000 per year

| Scholarships | |
|---|---|
| Full-Time (with Sponsorship) | • No Scholarship<br>• Fee Waiver will be determined on a case-by-case basis, based on the type of sponsorship |

## Important Dates

| Online application portal is open | |
|---|---|
| August 07, 2025 | Last date for submission of online application |
| August 09, 2025 | Shortlisting of Applicants and Communication |
| August 11, 2025 | Date for the interview |
| August 14, 2025 | Declaration of the result and communication of offers |
| August 18, 2025 | Registration and orientation of the new Ph.D. students |

## Contact Us

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Scan for details

Apply Here