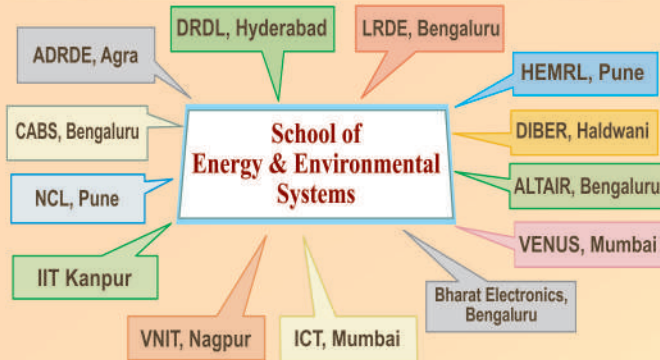


Research Collaborations



Core Faculty

Prof. (Dr) Prashant S. Kulkarni

FMASc, Director of SEES

Scientist-Portugal, PDF-Italy, KS Krishnan Fellow, PhD (ICT, Mumbai)

Top 2% Scientist in World: Stanford University, USA – Report



- Development of Safe Hydrogen and Applications
- Green Fuels & Energy Storage Materials
- Carbon capture & Sequestration
- Hazardous Material Management

Email : pskulkarni@diat.ac.in

Dr. Nikhil A. Bhave

Assistant Professor & OIC, MTech Course

PhD (RTMNU, Nagpur), MTech (Heat Power Engineering), MIE



- Thermal Energy and Sustainability
- Bio-fuels and Bio-diesel
- Combustion Engines
- Solar Energy Utilization

Email : nikhilabhve@diat.ac.in

Dr. Rahul Yadav

Assistant Professor & OIC, PhD Course

PDF-IIT Kanpur, PhD (IIT Madras), MS (Mechanical Engineering)



- Radiation Heat Transfer
- Gas Hydrates & Methane Recovery
- AI & Optimization in Energy Systems
- Hydrogen Fueling & Storage

Email : rahuly@diat.ac.in

Associated Faculty

Prof. (Dr) Balasubramanian K

HOD (M&ME) & Dean Academics

PhD (UK), FIoN (UK), MISAMPE, FMASc

Top 2% Scientist in World : Stanford University, USA - Report



- Green Nano composites
- High Performance Materials
- Surface Coating Technology
- Wastewater Treatment

Email : balask@diat.ac.in

Dr. Tejashree Bhave

Associate Professor (Applied Physics)

Chairman, Doctoral Research Committee

PDF-Japan, PhD (SPPU), Pune



- Photovoltaics & Hydrogen Generation
- Microfluidic Devices
- Nano materials Application for Sensors
- Swift heavy ion irradiation

Email : tejashreebhve@diat.ac.in

Dr. AA Bazil Raj

Associate Professor (Electronics Engineering)

PhD (Anna University), MTech (Electronics Engineering)

Top 2% Scientist in World : Stanford University, USA - Report



- High-Performance Digital System Design
- Optical/Digital Signal Processing
- Nano materials Application for Sensors
- LSS Target imaging

Email : brazilraj.aa@diat.ac.in

Dr. Pankaj M. Nadge

Assistant Professor (Mechanical Engineering)

PhD (IISc, Bengaluru), ME (Mechanical Engineering)



- Battery Thermal Management Systems
- Active & Passive Flow Separation Control
- Fluid dynamics & Heat Transfer
- Methane Adsorption Storage

Email : pankaj_nadge@diat.ac.in



Information Brochure



School of Energy and Environmental Systems (SEES)

Defence Institute of Advanced Technology

(Deemed to be University), Pune

Girinagar, Pune 411025

(An Autonomous Institute fully funded by Department of Defence R&D, Ministry of Defence, Government of India)

Contact : Tel #: +91 020 2460 4466

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History and General Overview of DIAT

DIAT was established in 1952 as Institute of Armament Studies and was renamed Institute of Armament Technology (IAT) in 1967. Its scope was expanded in 1964 and thereafter in the year 1981 by the Defence R&D Council. In 1980, Pune University recognized eight courses of the institute for the award of ME degree.

In the year 2000, IAT became a “Deemed to be University”. The Institute was renamed Defence Institute of Advanced Technology (DIAT) w.e.f. 1st April 2006. MHRD, Government of India has placed DIAT in the category ‘A’ Deemed University and is NAAC and NBA accredited. DIAT secured 57th position in Engineering category in the National Institute Ranking Framework (NIRF) 2023.

Presently, DIAT has 9 Science and Engineering departments. To promote interdisciplinary Research and Development, DIAT started 6 schools. The School of Energy and Environmental Systems mainly focuses on aspects of Sustainable Energy Solution and development of Environment friendly systems.

Vision

To become a world-class School that promotes sustainable development and address global energy and environmental challenges.

Mission

To produce skilled professionals with strong academic foundation capable to solve environmental and energy related problems of industry, academia and defence.

To foster research and development by disseminating knowledge in targeted manner to cater to socio-economic needs of global community.

To create a healthy atmosphere among the peers to carry out interdisciplinary research and life-long learning in the field of energy and sustainability.

Courses offered

- **Master of Technology (MTech) in Renewable Energy (Duration: 2 years, GATE/MoD & Industry Sponsored / Self-Sponsored)**
- **Doctor of Philosophy (PhD) in Energy and Environmental Systems**
- **Bridge Courses are available for students from varied background to help them onboard easily**
- **Workshops/Short Term Courses are conducted from time to time**

Eligibility for MTech

BE/ B.Tech. in Energy/ Mechanical/ Chemical/ Civil/ Environmental/ Computer Science/ Electrical/ Electronics/Biotechnology/ Full-time M.Sc. in all branches of Chemistry& Physics/ Graduation in any relevant discipline of Science and Engineering.



Career Advancement Opportunities

Scientific positions at DRDO, ISRO, DAE and CSIR labs in India, and abroad. PSUs like NTPC, BHEL, HAL, IOCL, HPCL etc., regularly recruit energy professionals. Certified Energy Manager and Auditor through Bureau of Energy Efficiency, Energy professionals in Private sector companies like Adani Transmission, JSW Energy, TATA Power etc., are in high demand.

Research Laboratories

1. Energy and Environment Laboratory
2. Advanced Chemical Technology Laboratory
3. Liquid and Gas Combustion Laboratory
4. Subsonic Wind Tunnel Facility

5. Fluid & Thermal Laboratory
6. Solar Energy Laboratory
7. Pulsed Laser Deposition
8. Additive Manufacturing Laboratory
9. Structural Composite Fabrication Laboratory
10. Analytical Instrumentation Lab

Major Laboratory Equipment

1. Biogas Facility
2. Biomass to Hydrogen Facility
3. Gas Chromatography/ Mass Spectroscopy
4. Microwave Plasma - Atomic Emission Spectroscopy
5. Variable Energy Ignition Source
6. Wind Mill
7. Hydrogen-Air Combustion Reactor
8. Photocatalytic Hydrogen Generation System
9. HPLC System
10. Elemental (C,H,N,S) Analyzer
11. Continuous Hydrogenation Setup
12. UV-Visible & FTIR Spectrophotometer
13. Total Organic Carbon (TOC) Analyzer
14. Ion Chromatograph
15. Viscometer and Density Meter
16. X-Ray Diffraction
17. Field Emission Scanning Electron Microscope
18. High Speed Camera
19. Solar Simulator
20. Real Time Oscilloscope
21. Software and Computing Facility: High Performance Computers, FLACS, ANSYS, GAUSSIAN, etc.

Research Highlights

- ✦ 3 Faculties among Top 2% Scientists in World
- ✦ 7.5 Crores of research funding from DRDO for Safe Hydrogen Development & Application
- ✦ 10.5 Crores of lab investment for equipment
- ✦ 75+ Total International Journal publications from the core faculties of school
- ✦ 6 patents granted to the core faculties of school
- ✦ 10 + Total book/book chapters published by the core faculties of school