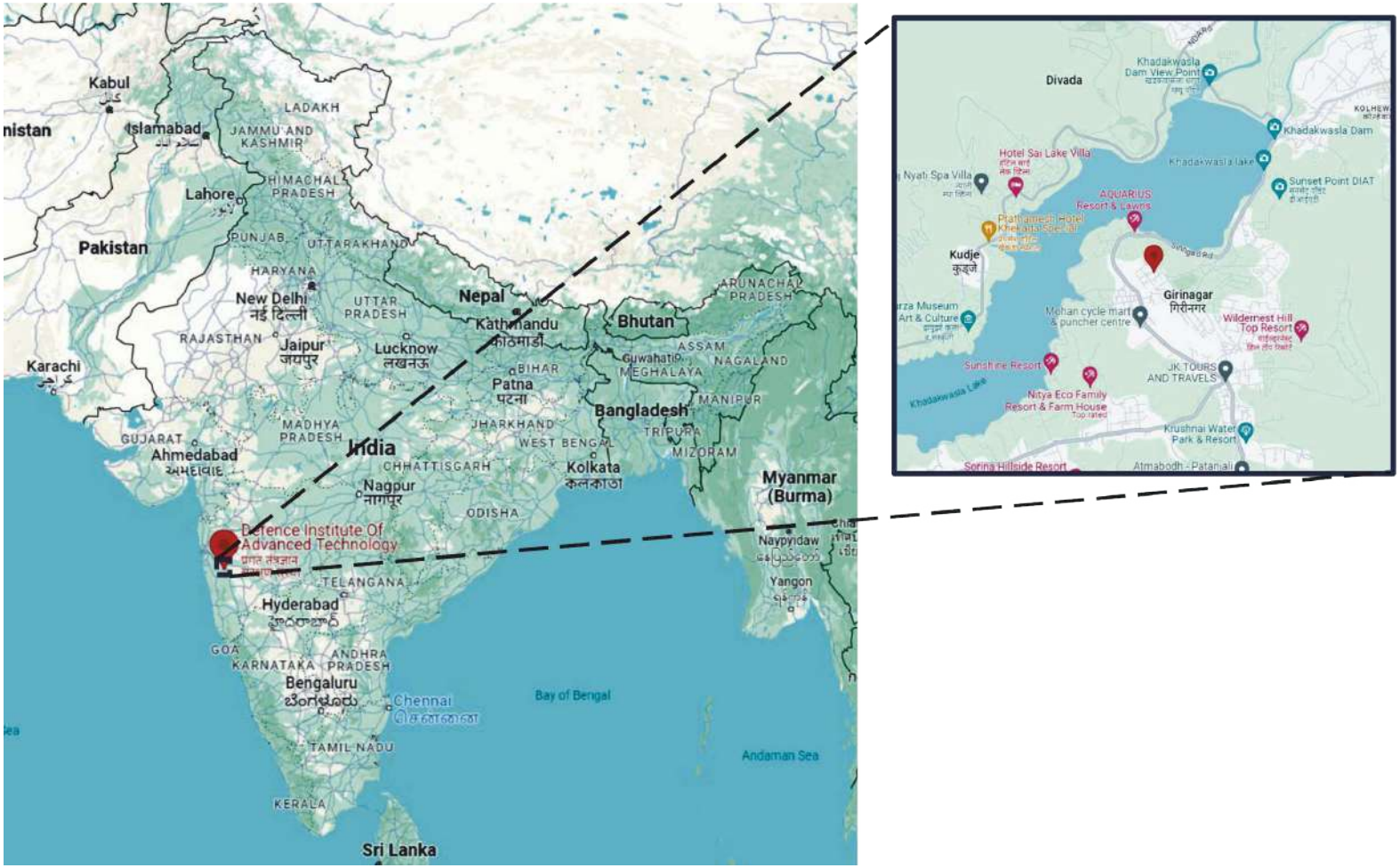
DEFENCE INSTITUTE OF ADVANCED TECHNOLOGY

(Deemed to be University)

Girinagar, Pune 411 025

www.diat.ac.in


Kabul
Islamabad
LADAKH
JAMMU AND KASHMIR
HIMACHAL PRADESH
Lahore
Pakistan
PUNJAB
UTTARAKHAND
HARYANA
New Delhi
नई दिल्ली
UTTAR PRADESH
Nepal
Kathmandu
काठमाडौं
Bhutan
ARUNACHAL PRADESH
RAJASTHAN
Jaipur
जयपुर
Lucknow
लखनऊ
ASSAM
NAGALAND
Guwahati
MEGHALAYA
Karachi
BIHAR
Patna
पटना
MANIPUR
Bangladesh
TRIPURA
MADHYA PRADESH
JHARKHAND
GUJARAT
Ahmedabad
WEST BENGAL
India
MIZORAM
CHHATTISGARH
Kolkata
কলকাতা
Myanmar (Burma)
Nagpur
नागपूर
ODISHA
Defence Institute Of Advanced Technology
Naypyidaw
TELANGANA
Yangon
Hyderabad
GOA
ANDHRA PRADESH
KARNATAKA
Bengaluru
Chennai
Bay of Bengal
TAMIL NADU
Andaman Sea
KERALA
Sri Lanka
Divada
Khadakwasla Dam View Point
Khadakwasla Dam
Hotel Sai Lake Villa
Nyati Spa Villa
Khadakwasla Lake
Sunset Point DIAT
AQUARIUS Resort & Lawns
Kudje
कुडजे
Girinagar
गिरीनगर
Mohan cycle mart & puncher centre
Wilderness Hill Top Resort
Sunshine Resort
JK TOURS AND TRAVELS
Nitya Eco Family Resort & Farm House
Khadakwasla Lake
Krushnai Water Park & Resort
Sorina Hillside Resort
Atmabodh - Patanjali

DIAT

Defence Institute of Advanced Technology, Pune

(DEEMED TO BE UNIVERSITY), GIRINAGAR, PUNE - 411025

(Established u/s 3 of the UGC Act 1956)

- NAAC NBA Accredited
- MHRD, Category 'A' Deemed to be University
- NIRF India Rankings (2024) - 63rd in Engineering Category

About University

1952 Founded by Patrick Blackett & Daulat Singh Kothari as Institute of Armament Studies at CME, Dapodi

1967 Renamed as Institute of Armament Technology and relocated to Girinagar, Pune.

1981 Scope of the Institute was enlarged by the Defence R&D Council.

2000 The Institute acquired the status of Deemed to be University

2006 Renamed as Defence Institute of Advanced Technology

2011 Started accepting GATE Qualified Scholarship students

Vision

To be a centre of excellence of international repute for Education, Training and Research in Advanced Technologies with a view to strengthen national security and self reliance.

Mission

To evolve as an innovative and unique research university to develop indigenous and contemporary defence related technologies in Navigation Systems, Wireless Sensors, Efficient Propulsion Systems, Weapon Systems for DRDO and Defence Services, provide technological solutions to the tri-services to optimize combat battlefield effectiveness and above all produce qualified quality manpower which can truly become an instrument for building a strong indigenous technology base in the context of creating a performing defence industrial base in India.

ORGANIZATION

About the Institute: Defence Institute of Advanced Technology (DIAT) is the premier Deemed to be University (DU) under the Department of Defence Research & Development, Ministry of Defence, Govt. of India. It has been established with the objective of imparting Post Graduate Education in Engineering and Applied Sciences on thrust areas relevant to Defence, Industries, R&D; and also to conduct research in the core areas of Defence Technologies. DIAT (DU) contributes significantly in the realm of Human Resources Development (HRD) for the Defence Forces by ways of imparting education and training on Defence Technology to the officers of the Armed Forces, Scientists of the DRDO, Technical Officers of the Ordnance Factory Board, Directorate of Quality Assurance, Public Sector Undertakings, friendly foreign countries; and a number of seats in various disciplines are offered to civilian candidates with scholarship. The University conducts PG.Diploma, M.Tech and Ph.D Programmes and offers a number of short-term courses and stands proudly with its motto ***शास्त्रेण शस्त्रं प्रकरोति रक्षाम्.***

History: The Defence Institute of Advanced Technology, (DIAT) as it is known today, came into being as the Institute of Armament Studies in 1952 in the CME campus. In 1967, the Institute was renamed as "Institute of Armament Technology, (IAT)", which moved to its present location at Girinagar, Pune, spread over 496 acres in scenic beautiful location, overlooking Khadakwasla Lake, in Sahyadri hills. From the relatively narrow scope of armament studies since inception, the role of the Institute was considerably enlarged by the Defence R&D Council in 1964 and further in 1981. On the basis of accreditation by the All India Council for Technical Education (AICTE), Pune University recognised eight courses of DIAT for the award of ME degree in 1980. In the year 2000, the Institute acquired the status of a Deemed University. IAT has renamed as DIAT w.e.f. 1 April 2006. MHRD, Government of India has placed DIAT (DU) in Category 'A' Deemed University and accredited by NAAC and NBA. The DIAT (DU) has been ranked the 57th Best University in India by the National Institution Ranking Network during March 2021.

DIAT (DU) is supported by 52 laboratories of Defence Research & Development Organization to conduct collaborative research works and to validate and assess various technologies developed by DIAT (DU). Also, DIAT (DU) is supported by the Armed Forces to conduct field trials on various research Activities.

Academics: The University has well-equipped laboratories with latest types of equipments and simulation/analysis softwares. The M. Tech, M.Sc. programmes are designed to include Course of Study, Seminars, Project/Thesis & Industry visit through which a student may develop his / her concepts and intellectual skills. Above all, the students are encouraged to develop a capacity for free and objectives enquiry, courage and integrity, awareness and sensitivity to the needs and aspirations of society. The emphasis is on practical's.

and training use of modern infrastructure to inculcate self-learning. The education system is a Choice Based Credit System (CBCS) where teaching is done by the well-qualified DIAT (DU) faculty members along with serving / retired scientists & officers of DRDO, Tri-services, ISRO, IITs, various R&D and teaching institutes in India and abroad. DIAT has MoUs with various Industries, Universities & Establishments in India as well as across the world. DIAT also has an active Placement Cell.

Patents: DIAT has filed Indian patents. The motivation of 'Make in India' has driven the university to apply for more than 50 patents since 2013. The faculty and students have published more than 1100 research papers in various national and international journals and conferences.

Library and Digital Resources: Information Center and Library (IC&L) is the knowledge hub of DIAT (DU), Pune. It reflects the institute's commitment to provide the best possible library and information services to its academic community of faculty, scientists, students and staff members. It is a major resource for Defence, Science and Technology; and allied subjects of the world. It has a tremendous collection of both printed and digital resources. The IC&L has been continuing its mission of facilitating the creation of new knowledge through the procurement, retrieval, preservation, organisation and dissemination of different resources. The collection of books, journals, e-journals, databases, thesis, reports, standards and other reading resources is the best and largest asset of the library. The library subscribes to print and online journals, databases such as Science Direct, IEL, ASME, ACM, SCOPUS, ProQuest, Springer and J-Gate etc. The library is using LibSys-7, the web-centric library management software. The state of art DRONA network and Data Centre enables IC&L's modern image. With these credentials in place, DIAT is able to fulfil its vision of being a centre of excellence of international repute for education, training and research in advanced technologies with a view to strengthen national security and self-reliance.

DIAT (DU) is proud to have accomplished the mission to evolve as an innovative unique research university to develop indigenous contemporary defence related technologies in navigation systems, wireless sensors, efficient propulsion systems, weapon systems for DRDO and defence services, provide technological solutions to the services to optimise combat battlefield effectiveness and above all produce qualified quality manpower which is truly instrumental in building a strong indigenous technology base in the context of creating a performing defence industrial base in India.

Departments & Schools

- Department of Metallurgical & Materials Engg.
- Department of Electronics Engineering
- Department of Mechanical Engineering
- Department of Aerospace Engineering & Autonomous System
- Department of Applied Chemistry, Energy and Environment
- Department of Applied Physics
- School of Defence Technology and Management
- School of Quantum Technology
- Department of Applied Mathematics
- Department of Computer Science and Engineering

M. Tech. Programmes

- System Engineering
- Guided Missiles
- UAVs
- Sensor Technology
- Lasers and Electro-optics
- Radar and Communication
- Defence and Space Electronics
- Signal Processing and AI
- VLSI and Embedded Systems
- Armament and Combat Vehicles
- Marine Engineering
- Automation and Robotics
- Mechanical System Design
- Artificial Intelligence
- Cyber Security
- Data Science
- Modelling and Simulations
- Materials Engineering
- Nano science and technology
- Quantum Communication & Sensing
- Technology Management
- Renewable Energy
- Semiconductor Chip Design
- Defence Technology

M.Sc. and M.Sc. Tech. Courses

- M.Sc. Food Technology
- M.Sc. Materials Science
- M.Sc. Applied Chemistry
- M.Sc. Applied Physics (Photonics)
- M.Sc. Tech. Photonics
- M.Sc. Information Technology
- M.Sc. Data Science

Department of Aerospace Engineering & Autonomous System

ABOUT THE DEPARTMENT :

Vision : "To be center of excellence for education, training and research in Aerospace technologies and Automation"

To impart higher education and training in the field of Aerospace Engineering and Technology having a bearing on the defense requirements in general and guided missiles in particular for the officers of the Ministry of Defence, Armed Forces, Public Sector Undertakings, other related Organizations and general public.

The M.Tech. programs of Aerospace Engineering Dept. is committed to prepare scientists, and engineers to take up challenges in design & development of aerospace vehicles. It also endeavours to train service officers to better understand & appreciate technologies involved in these vehicles.

The Department thrives to develop highly skilled and knowledgeable professionals who can advance the field of robotics through research, innovation, and technological advancements.

The Deparment's vision also involves fostering an environment of innovation and creativity, encouraging students and faculty to push the boundaries of what is possible in the field of robotics. It aims to create a culture of research excellence, where students and faculty work together to explore new ideas and develop innovative solutions to real-world problems.

The Deparment is actively involved in carrying out research in various areas mainly Humanoid, Mobile and Aerial Robotics, Motion Planning of Robots, Intelligent Robotics, Medical Robotics, Machine learning and AI in Robotics, Robot Dynamics and Control and Swarm Robotics. The School offers M.Tech, MS (By Research) and Ph.D. programs in Automation and Robotics.

Subsonic Wind Tunnel

3DOF Quanser

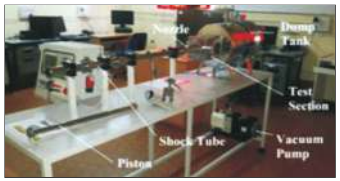


Table Top Hypersonic Shock Tunnel

UAV Laboratory

Programs offered	Research Areas	Research facilities
➢ M.Tech. in Aerospace Engineering • Guided Missiles • Air Armaments • UAVs • Automation and Robotics ➢ Ph.D. ➢ MS by Research	➢ Aerodynamics of grid fins ➢ Shock wave – boundary layer interaction and its control ➢ UAV Design ➢ Aerodynamics of corrugated airfoils and wings ➢ Flow control using tubercles ➢ Robust Control Based Collision Avoidance Based Swarm of UAVs ➢ Assistive Robotics for Medical Services ➢ Underwater Robotics ➢ Autonomous Driving Based on Deep Learning ➢ Biped/Quadruped Locomotion for Assistive Devices ➢ Autonomous Control for UAV ➢ Product Sorting Station ➢ Pipeline Inspection Robot ➢ Aerial Robotics Localization and Mapping Musculoskeletal ➢ Simulation and Control of Exoskeleton	➢ Subsonic Wind Tunnel ➢ Table Top Hypersonic Shock Tunnel ➢ PIV ➢ HWA ➢ 3DOF Quanser ➢ Autonomous Vehicle Research Studio-Q Drone (AVRS) ➢ UAVs, Fabricated UAVs ➢ Fire Bird VI–Mobile Robot Platform ➢ Fire Bird V and Spark V ➢ ABB Six Axis Articulated Robot Manipulator ➢ Raspberry Pi and IoT Sensors & Toolkits ➢ Spider Bot ➢ WOLF Rover ➢ High Resolution Underwater Camera ➢ Raspberry Pi and IoT Sensors & Toolkits

Projects Undertaken :

- Attenuation of flow field unsteadiness to flare induced shock /boundary layer interaction using Micro Vortex Generators (DST-SERB, New Delhi, Rs25,82,679.00), PI : Dr. Ganapati N. Joshi –Dept .of Aerospace Engineering, DIAT, Co-PI: Dr. Shashi B. Verma –EAD , CSIR NAL , Bengaluru.
- Development of Technology for Production of Non-flammable Hydrogen Gas and its Application in Lighter than Air (LTA) Vehicle ER& IPR, Rs.739.03 Lakhs). PI : Dr. Prashant S. Kulkarni ,Dept. of Applied Chemistry,Co-PI : Dr. Ganapati N. Joshi –Dept .of Aerospace Engineering, DIAT , Pune
- Aerodynamic Characterization of Grid Fins in Subsonic Regime (ARMREB, DRDO, Rs.44,64,952.00), PI: Dr. Ajay Misra & Co-PI: Dr. Ganapati N. Joshi, Dept. of Aerospace Engg., DIAT
- Design, Analysis and Synthesis of a finger assistive mechanism for hand rehabilitation application (DIAT)
- Prognostic Engine Health Assessment based on Borescope Images using AI Approach(ADA)
- Underwater Vision Based Surveillance and Tracking using Machine Learning(IITG TIDF)

Collaborations :

- DRDO Labs : DRDL, ADE, HEMRL, ARDE, R&DE(E), ASL , ADRDE etc.
- CSIR Labs : NAL
- IITs/IISc : IIT Kanpur, IIT Kharagpur, IIT Bombay, IISc Bengaluru
- ISRO : VSSC, Trivendrum
- R &D (Engineers) Pune, ARDE Pune, HEMRL Pune, IIIT Hyderabad, IISc Bangalore, Indian Army, Indian Coast Guard, Indian Navy, DRDO, IIT Bombay, ADA Bangalore.

Faculty Members

Dr. Ganapati N Joshi
Ph.D. IIT Delhi
HoD & Associate Prof.

Dr. Ajay Misra
Ph.D. IIT Kanpur
Asso. Professor

Dr. R K Satapathy
Ph.D. ACSIR Gaziabad
Professor

Sh. Vinay A Yadav
M. Tech. IIT Bombay
Asst. Professor

Dr. Pooja Agrawal
Ph.D. (IISc)
Assistant Professor

Dr. Hari Om Verma
Ph.D. IIT Kharagpur
Asst. Professor

Dr. S Soumya
Ph.D. (NITK)
Assistant Professor

Publications of the Department (Year 2021-2025)	
Journals	50
Conferences	36
Patents	01

Department of Electronics Engineering

ABOUT THE DEPARTMENT :

Vision : The Department of Electronics Engineering was established in the year 1972 and has steadily grown from offering short-term training courses to M.Tech, MS (By Research), and Ph.D. programmes. The Department currently offers M.Tech., in Electronics and Communication Engineering with an intake of 75 students distributed in all four specializations. M. Tech in Electronics and Communication is a four-semester programme. There are six courses in the first semester in each specialization, in second semester, there are six courses. Students do their dissertation work in third and fourth semester. Finally, students submit their thesis which is evaluated by the internal and external examiners. Being in Defence University, the Department offers M. Tech, MS (By Research), and Ph. D. programs in electronics and communication engineering and engaged in conducting various short-term courses to DRDO and Defence Officers. This programme is open for DRDO Scientists/Officers and Officers from Tri-services, Defence public sector undertaking, Industry personal and civilian students. Currently, the Department is well equipped with different advanced lab facilities such as Communication lab, Antenna Lab, SOC, and Embedded System Lab. The Department is working on many sponsored research projects, and the researchers have developed a range of products, including SAR Radar, Photonics Radar, etc. Moreover, the Department participates extensively in R&D activities in collaboration with Defence Labs and Establishments of India. The curriculum is designed for students to collaborate with DRDO labs, DPSU, Reputed institutes, and Industries for the dissertation with the defined project objectives.

Programs offered	Research Areas	Research facilities
➢ M.Tech ➢ Signal Processing & Communication ➢ Radar and Communication ➢ Defecnce and Space Electronics ➢ VLSI and Embedded Systems Ph.D. and M.S. (By Research) ➢ Software Defined Radio Applications ➢ MIMO Application/ Intelligent Radio Communication ➢ RF/Microwave sub-systems/ Antenna and Array/ Radar Systems ➢ Semiconductor Chip Design	➢ Antennas Systems ➢ Cognitive /Software Defined Radio ➢ Radar/Optical Signal Processing ➢ Radar System Design ➢ Wireless Communication ➢ Underwater Communication ➢ Electronic Warfare Applications ➢ RF and Microwave Engineering ➢ Embedded Systems and Smart Systems Design	➢ Radiation Pattern Measurement setup (Anechoic Chamber) ➢ EMI-EMC Chamber ➢ Radar Demonstration Kit ➢ Photonics System Hardware ➢ Signal Processing and system development platform ➢ VLSI Design & Developments Kit ➢ RF Design Simulators (ADS / HFSS / CST/ EmPro etc.)

Projects Undertaken :

- Design and Development of reconfigurable FETs using 2D materials for HF applications
- Development of short-range and low-power CW Radar, Pulse Radar, Pulse Doppler Radar, FMCW radar and SAR/ISAR radar.
- Long term training and report generation for the feasibility study on OTH radar
- Development Of A Medium Range (5-10km) Secured Free Space Optical Voice Simplex Communication System For The Mission Critical Wireless Optical Link
- Development of a multiband 0.5-30 GHz photonics assisted microwave EW receiver system.
- Electrically tunable 3-3.45 micrometer quantum cascade laser for LiDAR Applications
- Laboratory demonstration of highly stable Photonics RF wideband exciter
- Wearable Body worn Antennas for Medical / Defence Applications.
- Design and fabrication of wide-band rejection shields using multilayer of periodic resonator arrays and carbon-based nano-composites.

Collaborations :

LRDE - Bangalore, CABS- Bangalore, DLRL- Hyderabad, ARDE- Pune, IIT-Madras, IIT- Indore, Indian Coast Guard, Indian Navy, IIT-Bombay, NIELIT-Calicut , Cranfield University, UK.

Achievement :

M.Tech (ECE) course of has been accredited by NBA for 3 Years

School of Radar Technology has been approved

100% placement subsequently for 3 year

Faculty Members

Dr. A. A. Bazil Raj
Ph.D. (Anna University).
Professor & Head

Prof. BHVS N. Murthy
Ph.D. IIIT Hyderabad,
Professor & VC, DIAT

Dr. K. P. Ray
Ph.D. Electrical Engineering
Dept., I.I.T., Bombay
Professor

Dr. Rishi Raj Sharma
Ph.D. (Signal Processing
IIT-Indore)
Assistant Professor

Dr. K. K. Sawant
Ph.D. DIAT, Pune
Assistant Professor

Shri Abhilash M T
M. Tech. (VLSI Design)
SRM Eng. Collage
Assistant Professor

Dr. Rajesh K Singh
Ph.D. (Microwave Engineering),
IIT, Delhi
Assistant Professor

Dr. Bhubon Chandra Mech
Ph.D. (Nanoelectronics and
VLSI Engg)
Assistant Professor

Publications of the Department (Year 2021-2025)	
Journals	100
Conferences	36
Book chapters	100

Department of Mechanical Engineering

ABOUT THE DEPARTMENT :

Vision : "The Department endeavours to become Centre of Excellence in Armaments/Combat vehicles, Marine engineering, and Mechanical Systems Design, Robotics and System Engineering."

The Mechanical Engineering Department seeks to combine excellence in education and research with service to Defence. The goal of our academic programmes in mechanical engineering is to provide students with a balance of intellectual and practical experiences that enable them to address a variety of Defence needs.

The Department is known for research and projects in fluid dynamics, heat transfer, finiteelement methods, vibrations, experimental stress analysis, vehicle dynamics and 3D printing etc. Experimental and computational facilities are being continuously upgraded. The Department has established, over the years, a close interaction with the DRDO laboratories and industry. It hascarried out a large number of consultancy and sponsored research projects, which have been successfully completed. A number of sponsored research projects are ongoing. The Department has carried out significant curriculum development work in Mechanical Engineering. Apart from the regular courses the department offers, on a continual basis, a widevariety of short-term intensive programmes for personnel from DRDO laboratories, Armed Forces and industrial establishments. User-oriented M. Tech programmes on Armament/Combat Vehicles and Marine Engineering has been formulated as per the needs of the Defence sector.

Programs offered	Research Areas	Research facilities
➢ M.Tech in Mechanical Engineering with specializations in • Mechanical System Design, • Armament and Combat Vehicles • Marine Engineering • Industrial System Engineering ➢ Ph.D. ➢ MS by Research	➢ Nano/Micro Mechanical Behavior of Wear Resistant/Abradable Coatings ➢ Micro manufacturing/Micromachining ➢ Heat Transfer and Fluid Dynamics ➢ Fluid Structure Interaction (FSI) simulation ➢ Analysis and design of Composite structures	➢ Mechanical System Design & Analysis Laboratory ➢ Mechanical Testing Laboratory ➢ 3D Composite Printing Laboratory ➢ Metal Matrix Composite Material Laboratory ➢ Vibration & Stress Analysis Laboratory ➢ Precision Engineering Laboratory ➢ Thermal & Fluid Laboratory ➢ Coating Laboratory

Projects Undertaken :

- Design and development of Vibration Simulator
- Numerical and experimental investig ations on form ability of thin metal foilsin microforming for aerospace applications (ARDB)
- Numerical Analysis on Effect of Fragment Shapes on Damage of Target in Ballistic Applications (ARMREB)
- Non-line arfiniteelement analysis of composite valve (NMRL)
- Surfaceintegrity studies during MillingofAluminum- Lithium alloys usedin Aerospace applications for improved functional Performance (ARDB)
- BedIsolation System(AASHRAY) (DIAT)
- Low-costmechanicalventilator (DIAT)

Collaborations : R &D (Engineers), Pune, ARDE, Pune, HEMRL Pune, IIT Indore, Indian Army, Indian Coast Guard, Indian Navy, DRDO, IIT Bombay, ARAI Pune.

Achievements :

- M.Tech in Mechanical Engineering has been accredited for 6 years by National Board of Accreditation (NBA)




Faculty Members

Dr. Sunil Chandel
Ph.D. IIT Delhi, India
HoD & Professor

Mr VK Sharma
Sc.G.
(on deputation)

Dr. S.K. Panigrahi
Ph.D. IIT Kharagpur, India
Professor

Dr. D.G. Thakur
Ph.D. IIT Madras, India
Professor and Head

Dr. A. Kumaraswamy
Ph.D. OU, India
Professor

Dr. Pankaj Kumar Sharma
Ph.D. IIT Delhi, India
Sc'E' On Deputation

Dr. Sunil Nimje
Ph.D. DIAT, India
Asst. Professor

Dr. Pankaj Nadge
Ph.D IISc. Bengaluru
Asst.Professor

Publications of the Department (Year Last 5 Years)	
Journals	158
Conferences	158
Patents	11
Book chapters	12

Department of Metallurgical & Materials Engineering

ABOUT THE DEPARTMENT :

Vision : The Department is currently endowed with competent faculties from various world-class industries and academic institutes with comprehensive research and development experience. Presently, the Department aims to contribute significantly to the research output in scientific papers and technology developments in many strategic and advanced materials. The research areas are intelligent textiles, biosensors, electrospinning technique, magnetic materials, engineering adhesives, structural composites, nanocomposites, hybrid supercapacitor s, functional materials, plastic s processing, piezoelectric materials, supercritical foaming technology, and rapid prototyping for defence, aerospace, and other engineering applications. The Department has been sanctioned several projects funded by MoD, DST, BARC, L&T, Lupin pharmaceuticals. During the next five years, the Department is envisioning to create a Center of Excellence in Materials Research.

Programs offered	Research Areas	Research facilities
➢ M.Tech in Materials Engineering ➢ M.Sc. in Materials Science ➢ Ph.D.	Polymer Engineering, 3D/ 4D printing, Plastic Recycling, Green Nano composites, Composite Technology, Intelligent Textiles, Soft Magnetic Materials, Amorphous and nanocrystalline alloys, Non equilibrium processes. Energy storage electrode materials and its application in Supercapacitor and Batteries, Ceramics, polymers and nanocomposites for Energy harvesting applications. Additive manufacturing, Friction stir Processing/ welding, Microstructure and Texture. Nanocomposites, Polymer Nanocomposites, Composites, Polyurethane foams, Mechanical Properties. High Entropy Alloys, metal Matrix Composites, Deformation Behavior of Materials, Powder Metallurgy, High Temperature Deformation. Organic Photovoltaics, Phase - field modeling, ICME, Machine Learning, Data-d riven modeling, Mesoscale modeling.	Electrospinning V2, ESPIN – NANO., Impact tester – Tinius Olsen, Model Impact 503 Specimen Notcher, Tinius Olsen, Model 899, Drop Shape Analyser, KRUSS, DSA25E Weighing Machine, Aczel, CY224C, 3D printed – FDM, MakerBot Method X, Proliant HPC Server + Smart Rack, HP Prodesk Workstation x2, Broadband Dielectric/ Impedance Spectrometer, Electrochemical Workstation, Piezometer, Twin screw extruder, LTE 20 – 40, Lab Tech Engineering Company Ltd., Single Screw Extruder, LBE 20-30C, Lab Tech, Engineering Company Ltd., Melt Flow Index, MI – 4, GOTTFERT, Vacuum Casting, 5/01, RENISHAW, Brabender, Mixer 50 EHT, 835205, RoGS2. Corona Poling, Surface Area Analyzer, Viscometer, Thin Film Applicator, Hydraulic Hot Press, Inverted Optical Microscope, Micro-hardness Tester, Diamond wheel cut-off machine, Pin-On-Disc Tribometer, CH-instrument, Electropolishing, Rolling machine, FE-SEM, Wear machine.

PROJECTS UNDERTAKEN:

1. Design and development of high temperature high entropy alloys for aero engine applications
2. Protective textiles having decontamination for neutralisation of sulfurmustard Nerve gas and their stimulants.
3. Construction of composite road structure using waste polymer, waste synthetic face masks and waste tyres. Demonstrated road structure of waste mask in Panchet
4. Numerical and Experimental Investigation of Polymer Composite for Application in Electric Vehicles
5. Consultancy Project
6. Numerical and Experimental Investigation of Polymer Composites for Application in Electric Vehicles
7. Nanocrystalline soft magnetic core manufacturing technology
8. Development of Process and Establishment of Parameters for Producing Parts by Permanent Joining (Welding) of Metal Additively Manufactured Aluminium Alloy and Conventionally Manufactured Parts/ Components of Aluminium Alloy for current and Futuristic Application in Armament Engineering
9. Designing, Coating and Microstructural characterization of complex concentrated alloy
10. Design and development of High temperature High Entropy alloys for Aero Engine Applications
11. High Strength Structural High Entropy alloy for Defence application.
12. Design and Development of High Temperature High Entropy Alloys for Aero Engine Applications (GTRE/23CR0004/MTG/GN/CMS-III)
13. Protective Textiles Having Decontamination for Neutralization of Sulfur Mustard Nerve Gas and their Stimulants (LSRB/01/15001/LSRB-398/BTB/2022)
14. Artificial Intelligence enabled analysis of sludge derived biochar for the treatment of heavy metal and dye pollutants in aqueous system.
15. Numerical and Experimental Investigation of Polymer Composite for Application in Electric Vehicles
16. Machine Learning and Experimental Validation for Fabricating Hybrid Battery Type Supercapacitor
17. Thermal Barrier Coatings with Enhanced Radiation Rejection Performance: Computational Design to Prototype Fabrication
18. Development of open-cell polyurethane foam with simultaneous improvement in sound insulation and fire-retardant properties
19. High Strength Structural High Entropy Alloys For Defence Applications
20. Fatigue Resistance of Selectively Laser Melted (SLM) Ti-6Al-4V Alloy.
21. Analysis and Design of GP Cartridge Assembly
22. Development of Process and Establishment of Parameters for Producing Parts by Permanent Joining (Welding) of Metal Additively Manufactured Aluminum Alloy and Conventionally Manufactured Parts/ Components of Aluminum Alloy for current and Futuristic Application in Armament Engineering
23. Development of open-cell polyurethane foam with simultaneous improvement in sound insulation and fire-retardant properties
24. Development of polymer blend electrolyte for batteries with morphology optimization and improved ionic transport through experimental and computation techniques
25. Advanced Tungsten Alloys and composites.

Faculty Members

Prof. (Dr.) Balasubramanian K,
Dean Acad

Prof. (Dr.) Himanshu Sekhar Panda,
Head of the Department

Dr. Shanmugasundaram T.,
Associate Professor

Dr. T U Patro,
Associate Professor

Dr. Vijay Hiwarkar,
Assistant Professor

Dr. Fiyanshu Kaka,
Assistant Professor

COLLABORATIONS:

All DRDO Labs, Pune University, NCL Pune etc.

Bharat Forge Ltd Deakin University IISc Bangalore

IIT Kharagpur, IIT Indore, IIT Bombay, BARC, DGQA, L&T Defence

Publications of the Department (Year 2019-2025)	
Journals	409
Conferences	16
Patents	19
Book chapters	55

ACHIEVEMENTS of Faculties:

Fellow of Royal society of chemistry, Fellow of Maharashtra Academy of Sciences
Top ·cited paper award, DRDO best project award
Top 3% highly cited authors from India
Top 2% scientist award from India, 2025 (One faculty), Stanford-Elsevier Recognition
Top 2% scientist award from India, 2021 (Two Faculties)
Top 1% cited author in Materials Science, India, 2020, Award for Innovation and Design, 2019



Department of Applied Chemistry, Energy and Environment

ABOUT THE DEPARTMENT :

The Department of Applied Chemistry, Energy and Environment (ACE&E) has been formed at DIAT Pune by combining the oldest department at DIAT, i.e., Department of Applied Chemistry with the emerging School of Energy and Environmental Systems to address modern technological challenges of the Nation in the fields of clean energy, sustainability, and environment. By integrating interdisciplinary applied research combined with innovative teaching, and real-world applications to defence and allied sectors, the Department aims to produce skilled professionals and state-of-the-art solutions to current and future global challenges. The primary research inclination of the Department aims to address the problems in hydrogen energy-safety and storage, nanotechnology and its application, separation of valuable metals, chemical synthesis of advanced materials, renewable energy, bio-energy, hazardous material management, standalone and hybrid energy systems and sustainability.

Our academic programs are designed to provide students with a sound foundation in applied chemistry and renewable energy, at the same time training them in applications to new and emerging technologies such as nanoscience, modern energy systems, and industrial chemistry. The department actively promotes collaboration with industry, government agencies, and international institutions to foster impactful research and community engagement both at fundamental and application level.

The department also hosts state-of-the-art laboratories with high-end research equipment to cater a strong focus on problem-solving, product and process development. The Department of Applied Chemistry, Energy and Environment aspires to become a leading Centre in hydrogen energy, industrial and defence chemistry, renewables, and alternate fuels.

Vision

To be a Centre of Excellence in Chemical Sciences catering to Energy and Sustainability

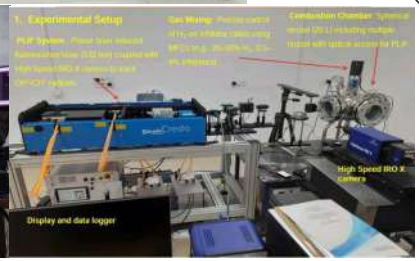
Mission

1. To provide high-quality education and training in fundamental and applied frontiers of chemical sciences and energy
2. To conduct cutting-edge, interdisciplinary research to address global and defence challenges
3. To cultivate a collaborative learning ecosystem that bridges gap between academia & industry for creation of skilled human resource

Programs offered	Research Areas	Research facilities
➢ M. Tech - Nano Science & Technology ➢ M. Tech - Renewable Energy ➢ M.Sc. Applied Chemistry ➢ M.Sc. Food Technology ➢ Ms by Research ➢ Doctor of Philosophy (Ph.D.) ➢ Short Term Courses	➢ Solid/Liquid Propellant ➢ Nano Chemistry/Nanomaterials ➢ Organic & Hybrid Nanomaterials ➢ Design-Optimization of Hybrid Energy Systems ➢ Solar Energy utilization ➢ Fuel Cell and Electrolysers ➢ Biomass to Hydrogen ➢ Wastewater Treatment ➢ Bio Nanotechnology ➢ Development of Safe Hydrogen ➢ Energy Storage Materials ➢ Water Splitting using Photo Catalysis ➢ Reclamation of Precious Metals ➢ Wastewater Treatment ➢ Thermal management	➢ Planar Laser Induced Fluorescent (PLIF) ➢ UV-Visible & FTIR Spectrophotometer ➢ Nuclear Magnetic Resonance ➢ X-Ray Diffraction ➢ Pyrolysis ➢ BET Analysis ➢ Field Emission Scanning Electron Microscope ➢ ICP AES Spectrometer ➢ HPLC, ICP-MS ➢ X-ray Diffraction ➢ Mass Spectrometer ➢ DSC ➢ Gas Chromatography ➢ MP-AES ➢ Ion Chromatograph ➢ Microbial Fuel Cell ➢ CHNS & TOC Analyzer ➢ Biomass to hydrogen Setup ➢ Variable Energy Ignition Source ➢ Viscometer and Density Meter ➢ Wind Mill ➢ Real Time Oscilloscope ➢ Fuel Cell and Electrolysers ➢ Solar Simulator ➢ Battery Thermal Management setup ➢ Software and Computing Facility: High Performance Computers, FLACS, ANSYS, CONVERGE etc.

Projects Ongoing:

1. Development of Technology for Production of Non-Flammable Hydrogen Gas & its Applications in Lighter than Air (LTA) Vehicle, OM No. ERIP/ER /202006001/M/01/1787/840/D (R&D) Date- 08th Oct 2021. (7.4 Cr) Dr. P S Kulkarni (PI).
2. Studies on Self-Healing Properties of Microencapsulated Species in HTPB Based Binder System, ARMREB-DRDO
3. Numerical Analysis and Parametric Study of Film Cooling Performance in Thrust Vectoring Nozzles, DFTM-DRDO, 86.7 Lakhs, Dr. Rahul Yadav (PI)
4. Coupled 1D-3D dynamic simulations of Hydrogen Refueling Stations with Pressure Cascading, DIAT-DRDO, 9.86 Lakhs, Dr. Rahul Yadav (PI) & Dr. P S Kulkarni (Co-PI).



Faculty Members

Prof. Prashant S. Kulkarni (Head of the Department)
Ph.D.-ICT Mumbai
Professor & CoE

Prof. P. K. Khanna
PhD - IIT Bombay
Professor

Prof. Shaibal Banerjee
PhD - IIT-Bombay
Professor

Dr. Chetan Bhongale
PhD – NCTU Taiwan
Assoc. Professor

Dr. Nikhil A Bhave
PhD-RTMNU Nagpur,
Asst. Professor

Dr. Rahul Yadav
PhD-IIT Madras,
Asst. Professor

Publications of the Department (Year 2019-2025)	
Journals	195+
Conferences	90+
Patents	11+
Book chapters	17+

Department of Applied Physics

ABOUT THE DEPARTMENT :

Vision : "The Department's aim is to train students for their career in academia as well as in industry in the frontier areas of Science & Technology. All our M Tech Programmes are a balance of courses in fundamental science and technology helping students to pursue career opportunities in Academics, Research & Industry with a special focus on defence industry."

- The Department came into existence as the Faculty of Applied Physics in 1952 and was renamed as Department of Applied Physics in 1979.
- The Department offers two M. Tech. Programmes, Laser & Electro-Optics, Sensors Technology, M.Sc Applied physics, M.Sc Tech in photonics and Ph.D program
- The programmes are designed to train defence officers (DRDO, Armed Forces and DPSU's) and young students.
- Department has a strong Ph. D. programme and offers an excellent research programme in the field of Nanotechnology, Laser and Photonics, Material Science, Sensors Technology, and Renewable Energy.
- The faculty is well qualified with vast experience in various fields of Applied Physics.
- "Department of Applied Physics has been accredited by the National Board of Accreditation (NBA). Program Accredited: M. Tech. in Sensor Technology / LEOC"

Programs offered	Research Areas	Research facilities
➢ M.Tech in Sensor Technology ➢ M.Tech in Lasers & Electro optics ➢ M.Sc Applied Physics (Photonics) ➢ M.Sc Tech in photonics ➢ Ph.D. ➢ MS by Research	➢ Sensors: CBW & Field Sensors, Electromagnetic Sensors, Metamaterial Sensors. ➢ Nanomaterial for Electromagnetic Shielding and stealth ➢ Devices: Sensors, Photonic Devices, Lab on Chip ➢ Drug delivery & Bio-sensing Devices ➢ Sensors for Chemical Sensing & breathing biomarkers for disease diagnostics ➢ EMI shielding & Radar absorbing material ➢ Nanostructure Characterization & applications ➢ Lasers & Photonic Technology: Optical Sensors, Quantum Dot Laser, Mid-IR and THz Quantum Cascade Laser, Integrated Optics ➢ Ultrafast Lasers and Nonlinear Optics, Terahertz Photonics ➢ Free-space and Underwater Optical Communications	➢ Lasers & Electro optics Lab ➢ Sensor Technology Lab ➢ Advanced Laser Laboratory ➢ High Power CO_2 Laser facility ➢ Scanning Probe Microscope ➢ Sputter Ion deposition System ➢ XRD System ➢ Spectroscopic Ellipsometer ➢ Raman Spectrometer ➢ Vector Network Analyzer ➢ Pulse Laser Deposition System ➢ Optical Spectrum Analyzer ➢ UV-Vis Spectrophotometer ➢ Electro Chemical Analyzer ➢ Contact Angle Measurement System ➢ OWC test bed ➢ Fiber Optics Glass Processing System ➢ Terahertz Spectroscopy and Imaging Systems

Projects Completed :

- Nanomaterials for Defence Applications: Coatings, Devices and Healthcare - DIAT-DRDO Programme on Nanomaterials
- Theoretical and experimental investigations of induced magnetism in GNR – DST Project
- Mapping lateral organization and nanomechanical properties of protein incorporated biomimetic membranes and cell membranes – DST - Inspire faculty project

Projects Ongoing :

- Design and Fabrication of wide-band rejection shields using multilayers of periodic resonator arrays and carbon-based nanocomposites -DST NanoMission Project
- Electrically Tuneable 3 -3.45µm Quantum Cascade Laser for LiDAR Application –LASTEC-DRDO Project
- Design and Development of THz Quantum Cascade Laser –SSPL-DRDO Project
- Demonstration and Implementation of a Bi-directional (>10m) Underwater Optical Communication link with various Modulation Schemes on a Testbed – IITG-TIDF project

Collaborations :

- Antrag auf Gewährung eines KHYS-Gaststipendiums
- University of Rouen, Cedex-FRANCE
- IISER Pune, ARAI, Pune, IRDE, Dehradun

Achievements :

- Prof. Sangeeta Kale : Started a Company at DIAT-IIC, "Navyukti Innovations Pvt. Ltd
- Dr. Suwarna Datar : Fellow of Maharashtra Academy of Sciences 2020
- Dr. Suwarna Datar : Institute of Physics Publishing: India top cited Award: Materials 2018-21
- Dr. Tejashree Bhave: Patent – Device and process of making Nanoparticle drug complex

Faculty Members

Dr. Tejashree Bhave (HoD)
Ph.D. SPPU, Pune, India
Professor

Prof. Sangeeta Kale
Ph.D., SPPU, Pune, India
Professor, Dean SR

Prof Suwarna Datar
Ph.D., SPPU, Pune, India
Professor, Dean ITP

Dr. Devnath Dhirhe
Ph.D. University of Glasgow, UK
Asso. Professor

Dr. A V R Murthy
Ph.D., IISER, Pune,
India Asst. Professor

Dr. Shyamal Mondal
Ph.D. IIT Kharagpur, India
Asst. Professor

Publications of the Department Last 5 Years	
Journals	62
Conferences	50
Patents	02
Book chapters	10

Department of Computer Science and Engineering

ABOUT THE DEPARTMENT :

Vision : To be a center of excellence of international repute to provide high quality education, research & training in the area of Cyber Security (CS) and Artificial Intelligence (AI) to promote innovation and entrepreneurship skills amongst the students with a view to strengthen national security and self-reliance."

"Contribute in building Intelligent-Cyber space & Cyber-Secure Nation."

Programs offered	Research Areas	Research Facilities
➢ MTech inCyber Security ➢ MTech in CSE (Specialization in Artificial Intelligent) ➢ MSc (IT) ➢ PhD ➢ MS by Research ➢ Short term and online programs on Cyber Security,AI/ML, Cryptology, Digital Forensics ➢ PAN India Certificate Course in Cyber Security. ➢ PAN India Certificate Course in Artificial Intelligence.	➢ Cyber Security - Cryptography, Digital Forensic, Digital Watermarking and Steganography ➢ Wired and Wireless Networking ➢ Network Centric Operation ➢ Knowledge Discovery and Data Mining ➢ High-Performance Computing ➢ Biometrics & Mobile Computing ➢ Malware Analysis, Program Analysis ➢ Verification & Validation ➢ Operating System ➢ Computer aided diagnostics for Medical Imaging Processing ➢ Numerical Parallel Algorithms ➢ AI for Defence and Medical Applications	➢ Cyber Security Lab ➢ Digital Forensics Lab ➢ Malware Analysis Lab ➢ AI for Cyber Data Analytics Lab ➢ Secure Systems Lab ➢ Augmented Reality Lab ➢ Cyber Physical Systems Lab

Salient features of Department of Computer Science and Engineering :

The Department of CSE School contributes in the development of the human skilled resources in the area of Modelling and Simulations, Data Sciences, Data Analysis, Cyber Security & Artificial Intelligence. The niche areas of computing and digitization are explored. CSE contributes to the Government of India GoI's initiative in celebrating India@75 ATMANIRBHARR BHARAT by launching two online Certification courses of twelve- & sixteen-weeks duration each in AIML & Cyber Security offered at PAN India level.

The students of the Department have gained top positions in Smart India Hackathons in 2019 & 2020. The Department contributes in successfully executing sponsored funded research projects in collaborations with agencies of national importance; and various consultancy assignments are completed successfully.

The students & staff of the Department actively participate in various cultural & sports activities; & the students won Institute Level Sport Cup in 2021.

Faculty Members

Dr. Arun Mishra (HoD)
Ph.D. NIT, Alhabad
Asso. Prof.

Prof. CRS Kumar
Ph.D. Melbourne, Australia

Dr. Manisha J. Nene
Ph.D. DIAT, Pune
Asso Prof.

Dr. Upasna Singh
Ph.D. IIIT, Alahabad
Asso. Prof.

Dr. Sunita Dhavale
Ph.D. DIAT, Pune
Asso. Prof.

Dr. Deepti Vidyarthi
Ph.D. DIAT, Pune
Asst. Prof.

Publications of the Department Last 5 Years	
Journals	50
Conferences	62
Patents	02
Book chapters	03

School of Quantum Technology

ABOUT THE DEPARTMENT :

Vision : : "Incubation centre for Quantum enabled India for the creation of technical and human resource"

Quantum technology is a new set of technological advancements that depends on the features of quantum physics. This technology will significantly impact the defence, security, and commerce sectors and also creating practical applications—such as quantum communications, quantum key distribution, quantum computing, and quantum metrology —by harvesting the quantum nature of the various physical phenomenon. School of Quantum Technologywas established in 2020 to facilitate advanced research programs and train the next generation of scientists and students in Quantum technologies.School of Quantum Technology (SQT) aims to develop cutting-edge research experimental capabilities in quantum sciences that offer remarkable opportunities to build scientific foundations for designing the quantum realm for DRDO as a whole. The research programs at SQT will explore the large scale and practical implementation of quantum sciences for defence, focusing on communications, sensing and computation as thrust areas.The school is establishing state-of-the-art, world-class research laboratories to achieve the goals in Quantum key distributions, Quantum communications, Quantum metrology and sensing as a kick-start to the program.

Programs offered	Research Areas	Research facilities
➢ M.Tech. in Quantum Computing (Spl. Quantum Metrology and Sensing) ➢ Ph.D. ➢ MS by Research	➢ Quantum key-distribution ➢ Free-space and fiber-based Quantum communication ➢ Quantum metrology and sensing ➢ Quantum simulations and Quantum machine learning ➢ Quantum materials ➢ Experimental AMO Physics * Trapped Ion & Cold Atom Systems * Atom Interferometry * Quantum sensing & Metrology	➢ Quantum optics laboratory (class-10000 room with vibration isolation optical tables) ➢ Hands-on experiments for quantum entanglement, Bell's inequality, Quantum cryptography, quantum metrology ➢ Quantum simulations laboratory (Param-Shavak computers)

Projects Undertaken :

- DIAT-institutional start up grant

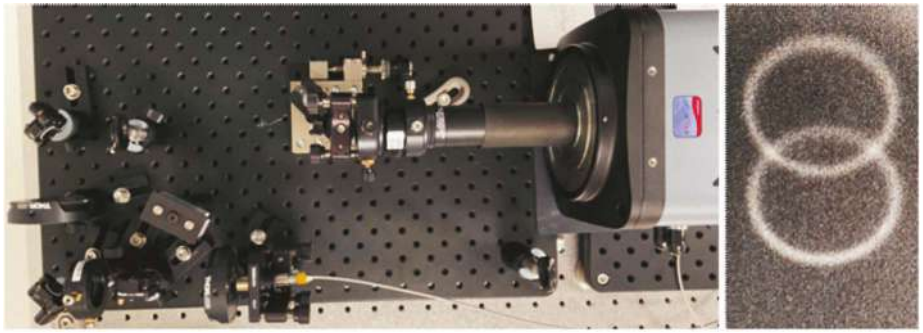
Collaborations :

- LNE-SYTRE, France; Sorbonne Univ., France; Kansas State Uni., USA; PRL, India; IGCAR, India; TIFR, Mumbai& Hyderabad; RCI, Hyderabad;

Achievements :

- 1st MTech program on Quantum Technology in the country (Highlighted in NASSCOMM report)

Entangled photon source with full characterization capability



Faculty Members

Dr. G. Raghavan
Ph.D. IISc, Bangalore, India
Professor and Director

Dr. CS. Unnikrishnan
Ph.D. TIFR, India
Professor

Dr. Kanaka Raju P.,
Ph.D. UEC, Tokyo, Japan
Asst. Professor

Dr K. Srinivasan
Ph.D. HBNI, Mumbai India
Asst. Professor

Dr. Sumanta Khan
Ph.D., IISc, Banglore, India
Asst. Professor

Publications of the School (Year 2021-2025)	
Journals	50
Conferences	21
Book chapters	03

Department of Applied Mathematics

ABOUT THE DEPARTMENT :

The Department of Applied Mathematics at the Defense Institute of Advanced Technology (DIAT), Pune, is a premier center for education and research in applied mathematics, data science, and modelling and simulation. Our programs — M.Tech. in Data Science, M.Tech. in Modelling and Simulation, and M.Sc. in Data Science — provide rigorous training in mathematical foundations, computational techniques, and real-world problem solving, preparing students for impactful careers in research, Defense applications, and industry.

Our faculty members are highly qualified researchers actively involved in interdisciplinary and defense-oriented projects, integrating their expertise into teaching and innovation. The department promotes a dynamic academic environment through research, nurturing analytical thinkers and innovators for the nation's technological advancement.

The Department of Applied Mathematics started in 1953 as the Faculty of Applied Mathematics with the Institute of Armament Studies. Initially, the Faculty comprised Applied Mathematics, Ballistics, Statistics, and Data Sciences. In 1991, these departments merged to form the Department of Applied Mathematics. It offers two-year Interdisciplinary programs. Current strength is seven experienced faculty, all well-qualified from IIT/NIT with post-doctoral experience.

Collaboration: -

1. DLRL Hyderabad
2. GTRE DRDO Bangalore
3. International Collaboration for project SPARC

Achievements: -

1. A framework for Super-Resolution in IR Thermal Images for Drone Surveillance (Dr. Y. S. Dadwhal, Asst. Prof.)
2. Data Analytics Framework for Marine Surveillance -

   (Dr. Bharathramkrushna, Asst. Prof.)

Programs offered	Research Areas	Research facilities
➢ MTech in Modelling & Simulation ➢ MTech in Data Science. ➢ MSc (Data Science) Deep Learning	➢ Modelling & Simulation ➢ CFD (Porous Media, Biomechanics, BL theory) ➢ Numerical Methods to PDE (FEM, DDM, BEM) ➢ Computer Vision, Machine Learning, Deep Learning ➢ Computational Instrumentation ➢ Fluid Mechanics ➢ Heat and Mass Transfer: Nanofluids ➢ Fluid Flow Through Porous Media ➢ Computational Fluid Dynamics ➢ Computational Numerical Methods ➢ Image Processing and Numerical Solutions to PDEs using Finite Element ➢ Domain Decomposition, and Fictitious Domain Methods ➢ Data Science, Machine Learning, Sensor Data Fusion, Imbalance Compensation ➢ Maritime Surveillance, Autonomous Driving ➢ Statistical Machine Learning, High-dimensional Data Analysis, Data Mining, Random Matrices	➢ Modelling & Simulation Lab ➢ Data Science Lab ➢ Image Processing ➢ Numerical Analysis ➢ Numerical Solution to PDEs

Project Undertaken: -

1. Computational Analysis of two-dimensional flows through asymmetric catheterized stenotic tapered Artery. (PI: Dr. D. Srikanth)
2. Development of automated deep sea species identification system using deep learning techniques. (PI: Dr. D. Srikanth)
3. "Super-Resolution in IR Thermal Images for Drone Surveillance" Seed Project, DRDO. 9,44,000 /- (Rs Nine Lakh forty-four thousand only), PI: Dr. YOGESHWAR SINGH DADWHAL, CO-PI PROF. SVSSNVG KRISHNA MURTHY
4. "A Data Science Perspective for IVHM Of Aircraft Engines- Design and Development of Intelligent Prognostics" Funded By DIA-COE IIT Bombay, Rs 85.8 Lakhs, PI: Dr YOGESHWAR SINGH DADWHAL CO-PI PROF R K SATAPATHY
5. "Mathematical modelling and Simulation of Temperature dependent nanofluid flows through porous boundaries" SPARC Project, Ministry of Education, Govt of India. 65,04000 /- (Rupees Sixty-Five Lakhs and Four thousand only), Indian PI: Dr. ODELU OJJELA, DIAT, Foreign PI: Dr. Mikhail A. Sheremet, Tomsk State University, Russia
6. Development of AI Frameworks for Improving Maritime Traffic Situational Awareness, Funded by TiHAN, IIT Hyderabad (Dr. Bharathramkrushna, Asst. Prof.)
7. Development of Data-Driven Machine Learning Algorithms for Engine Health Prognostics on FADEC Data, Funded by ADA Bangalore (Dr. Bharathramkrushna, Asst. Prof.)
8. Data Analytics based Maritime Traffic Analysis. DIAT Seed grant (Dr. Bharathramkrushna, Asst. Prof.)

Faculty Members

Dr. Odelu Ojela (HoD)
Ph.D. (NITW)
Prof.

Prof. SK Murthy
Ph.D. (I.I.T Kanpur),
PDF (ECP, France)

Dr. Debasish Pradhan
Ph.D. IIT Bombay
Asso. Prof.

Dr. Srikanth Dasari
Ph.D. (NITW)
Asso. Prof.

Dr. Y. S. Dadwhal
Ph.D. (AcSIR- Chandigarh)
Asst. Prof.

Dr. Bharat Ramkrishna
Ph.D. (I.I.T Hyderabad)
Asst. Prof.

Dr. Sushma Kumari
Ph.D. (Kyoto, Japan)
Asst. Prof.

Publication of the Department (Last 5 Year)	
Journals	60+
Conferences	29

School of Defence Technology and Management

ABOUT THE DEPARTMENT :

Vision : The School of Defence Technology & Management in DIAT was launched in 2020 to impart education and train specifically to the DRDO workforce & Tri-services into Defence Technology. The school focusses on teaching and research in advanced areas of defence technologies and futuristic technology programs.

The Defence Technology programmes focus area are armament, advanced technologies in combat vehicles, materials engineering and high energy materials are pursued. On the other hand, the Technology Management programme emphasises techno-managerial competencies, including Project Management, Behavioural Science & Strategic Management, Applied AI for Technology & Management, Quality Management, and Logistics & Supply Chain Management.

To become recognised centre of excellence for developing Progressive, Transformative, Competent and Effective Leaders for imparting Interdisciplinary Management Skills.

The School is bestowed with faculty having rich experience in various niche areas of defence technology. Faculty members play a vital role in mentoring, guiding, and training the students in various aspects of techno-managerial skills.

The School of Defence Technology and Management offers M.Tech, M.Sc, and Ph.D programmes.

Publications of the School (Year 2019-2025)	
Journals	50
Conferences	37
Patents	04
Book chapters	25

Faculty Members

Dr. Shaibal Banerjee (HoD)
Ph.D. IIT, Bombay
Professor & Director

Dr. RK Satapathy
Ph.D. ACSIR, Ghaziabad
Professor (On Contract)

Dr. Pankaj Kumar Sharma
Ph.D. IIT, Delhi
Sc 'E' (On Deputation)

Dr T. U Patro
Ph.D., (IIT Bombay)
Assistant Prof.

Dr Ganapati Joshi
Ph.D. IIT, Delhi
Asso. Professor

Dr. Sumati Sidharth
Ph.D. (Mgmt), TMV, Pune
Associate Professor

Dr. Pankaj M Nadge
Ph.D. IISc. Bengaluru
Assistant Professor

Dr. Nilesh Rambhau Ware
Ph.D. (IIT Delhi)
Asst. Professor

Dr Amruta Nighojkar
Ph. D., IIT Jodhpur, Mech. Eng.
Asst. Professor

Programs offered	Research Areas	Research Facilities
➢ M.Tech. Technology Management ➢ Ph.D. ➢ M.Tech. Defence Technology ➢ M.Sc. Tank Technology	➢ Project Management ➢ Behavioural Science & Strategic Management ➢ Applied AI for Technology & Management ➢ Logistics & Supply Chain Management ➢ Quality Management ➢ High Energy Materials ➢ Materials Engg	➢ R&D Management and AI analytics lab ➢ Decision Science Lab ➢ Professional Skill Development Lab

Collaborations :

- ITM Mussoorie
- IISC Bangalore
- ISI Kolkata
- NIAS Bengaluru
- DRDO Labs
- Symbiosis Pune
- NIN Pune

Department Facilities :

- Conference Room
- Departmental Library

Department Facilities :

- Conference Room
- Departmental Library

FEE STRUCTURE FOR MASTER OF TECHNOLOGY(M.Tech) W.E.F AY- 2025-26

CCMT/ SCHOLARSHIP CATEGORY					ARMED FORCES (TRI SERVICES) & COAST GUARD MOD SPONOSRED	DRDO, DGQA SPONSORED STUDENTS & ARMED FORCES (TRI SERVICES & COAST GUARD) SELF-SPONSORED STUDENTS	DPSU/PSU/INDUSTRY/ANOTHER INSTITUTE SPONSORED	SELF FINANCED CATEGORY		STUDENTS FROM THE SAARC COUNTRIES AND FROM THE LEAST DEVELOPED NATIONS (LDCS) / DEVELOPING NATIONS AS PER IMF CLASSIFICATION [IN USD]	DEVELOPED NATIONS AS PER THE IMF CLASSIFICATIO (NON -SAARC) [IN USD]
Admission Fee (One Time Fee to be paid at time of Admission) **Non-Refundable**	6000				6000	6000	6000	6000		$ 700	
Semester Fees											
Per semester fee	All other M.Tech Programs		M.Tech in i)VLSI & Embedded Systems ii)Semi-Conductor and Chip Design		All M.Tech program including M.Tech in VLSI & Embedded Systems and M.Tech in Semi-Conductor and Chip Design			M.Tech in i) VLSI & Embedded Systems ii)Semi-Conductor and Chip Design	All other M.Tech Programs	All M.Tech program including M.Tech in VLSI & Embedded Systems and M.Tech in Semi- Conductor and Chip Design	
	Gen/ OBC/ EWS	SC/ST	Gen/ OBC/ EWS	SC/ST				All category students			
	AMOUNT IN INDIAN RUPEES									Amount in USD	
Tuition	15000	0	35000	0	0	37000	56000	30000	37000	1000	20
Library	2000	2000	2000	2000	1000	2000	2000	2000	2000	40	40
Miscellaneous	18000	18000	38000	38000	5000	11000	17000	48000	11000	460	460
Total (Payable in each Semester)	**35000**	**20000**	**75000**	**40000**	**6000**	**50000**	**75000**	**80000**	**50000**	**$1500**	**$2500**

FEE STRUCTURE FOR MASTER OF TECHNOLOGY FOR WORKING PROFESSIONALS

One Time Fee		Total
Admission Fee (Non-Refundable	Rs. 6000/-	Rs. 26,000/-
Caution Deposit (Refundable)	Rs. 20,000/-	
Per Semester Fee		Total
Tuition Fee	Rs. 1,06,000/-	Rs. 1,25,000/- per semester per student
Library Fee	Rs. 2,000/-	
Miscellaneous	Rs. 17,000/-	

- Caution Deposit of Rs. 20,000/- to be paid at the time of admission and students need to claim refund within one year from the completion of program. After one-year caution deposit will not be refunded.
- Fee structure applicable for M.Tech new admissions (for new entrants) for the Academic Year 2025-26 onwards.

FEE STRUCTURE FOR MASTER OF SCIENCE (BY RESEARCH) W.E.F AY- 2025-26

INTERNAL PART TIME, PROJECT STAFF [JRF/SRF/RA] WORKING UNDER SPONSORED PROJECT OF ALL DRDO LABS & DIAT					SERVICE OFFICERS, INDIAN COAST GUARD DRDO, DGQA ORGANISATION SPONSORED AND SELF SPONSORED	INDUSTRY SPONSORED/OTHER GOVT. ORGANISATIONS/AUTONOMOUS BODIES/DPSUs/PSU/ENGINEERING COLLEGES [GOVT. & PRIVATE], GOVT. INDUSTRY ETC.	STUDENTS FROM THE SAARC COUNTRIES AND FROM THE LEAST DEVELOPED NATIONS (LDCS) / DEVELOPING NATIONS AS PER IMF CLASSIFICATION. [IN USD]	DEVELOPED NATIONS AS PER THE IMF CLASSIFICATION NON-SAARC [IN USD]
Fee Details	FOR 1&2 YEAR		3 YEAR ONWARDS [Up to thesis submission]		Per Semester [Up to thesis submission]	Per Semester [Up to thesis submission]	US $ 1500 (Excluding Boarding & Lodging)	US $ 2500 (Excluding Boarding & Lodging)
	GEN, OBC & EWS	SC & ST	GEN, OBC & EWS	SC & ST	ALL CATEGORY	ALL CATEGORY		
	AMOUNT IN INDIAN RUPEES						AMOUNT IN USD	
Admission Fee (One Time Fee to be paid at time of Admission) **Non-Refundable**	**6000**	**6000**	**0**	**0**	**6000**	**6000**	**$ 700**	**$ 700**
Semester Fees								
Tuition	15000	0	15000	0	37000	47000	1000	2000
Library	2000	2000	2000	2000	1500	1500	40	40
Miscellaneous	20000	20000	25000	25000	11500	16500	460	460
Total (Payable in each Semester)	**37000**	**22000**	**42000**	**27000**	**50000**	**65000**	**$1500**	**$2500**

- Caution Deposit of Rs. 20,000/- to be paid at the time of admission and students need to claim refund within one year from the completion of program. After one-year year caution deposit will not be refunded.
- Fee structure applicable for M.Sc. new admissions (for new entrants) from the Academic Year 2025-26 onwards.

FEE STRUCTURE FOR MASTER OF SCIENCE W.E.F AY- 2025-26

CCMN			ARMED FORCES (TRI SERVICES) & COAST GUARD MOD SPONOSRED		DRDO, DGQA SPONSORED STUDENTS & SELF-SPONSORED STUDENTS ARMED FORCES (TRI SERVICES & COAST GUARD)		DPSU/PSU/ INDUSTRY/ ANY OTHER INSTITUTE SPONSORED	SELF FINANCED CATEGORY	STUDENTS FROM THE SAARC COUNTRIES AND FROM THE LEAST DEVELOPED NATIONS (LDCS) / DEVELOPING NATIONS AS PER IMF CLASSIFICATION. [IN USD]	DEVELOPED NATIONS AS PER THE IMF CLASSIFICATION (NON -SAARC) [IN USD]
Admission Fee (One Time Fee to be paid at time of Admission) **Non-Refundable**	6000		6000		6000		6000	6000	$ 700	
Semester Fees										
Per semester fee	Gen/OBC /EWS	SC/ST	All Other M.Sc.	M.Sc. Food Technology	All Other M.Sc.	M.Sc. Food Technology	All other M.Scs. including M.Sc. Food Technology			
	All other M.Sc. programs including M.Sc. Food Technology									
	AMOUNT IN INDIAN RUPEES								AMOUNT IN USD	
Tuition	5500	0	0	39000	18500	39000	54000	25000	200	500
Library	2000	2000	1000	2000	2000	2000	2000	2000	40	40
Miscellaneous	13000	13000	5000	9000	14500	9000	9000	18000	460	460
Total (Payable in each Semester)	**20500**	**15000**	**6000**	**50000**	**35000**	**50000**	**65000**	**45000**	**$700**	**$1000**

- Caution Deposit of Rs. 20,000/- to be paid at the time of admission and students need to claim refund within one year from the completion of program. After one-year year caution deposit will not be refunded.
- Fee structure applicable for M.Sc. new admissions (for new entrants) from the Academic Year 2025-26 onwards.

FEE STRUCTURE FOR DOCTOR OF PHILOSOPHY (Ph.D.) W.E.F AY- 2025-26

INSTITUTIONAL SCHOLARSHIP, NATIONAL FELLOWSHIP, INTERNAL PART TIME, PROJECT STAFF [JRF/SRF/RA] WORKING UNDER SPONSORED PROJECT OF ALL DRDO LABS & DIAT.					SERVICE OFFICERS, INDIAN COAST GUARD DRDO, DGQA ORGANISATION SPONSORED AND SELF SPONSORED	INDUSTRY SPONSORED/OTHER GOVT.ORGANISATIONS/AUTONOMOUS BODIES/DPSUs/PSU/ENGINEERING COLLEGES [GOVT. & PRIVATE], GOVT. INDUSTRY ETC.	STUDENTS FROM THE SAARC COUNTRIES AND FROM THE LEAST DEVELOPED NATIONS (LDCS) / DEVELOPING NATIONS AS PER IMF CLASSIFICATION. [IN USD]	DEVELOPED NATIONS AS PER THE IMF CLASSIFICATION NON-SAARC [IN USD]
Fee Details	FOR 1&2 YEAR		3 YEAR ONWARDS [Up to thesis submission]		Per Semester [Up to thesis submission]	Per Semester [Up to thesis submission]	US $ 1500 (Excluding Boarding & Lodging)	US $ 2500 (Excluding Boarding & Lodging)
	GEN, OBC & EWS	SC & ST	GEN, OBC & EWS	SC & ST	ALL CATEGORY	ALL CATEGORY		
	AMOUNT IN INDIAN RUPEES						AMOUNT IN USD	
Admission Fee (One Time Fee to be paid at time of Admission) **Non-Refundable**	**6000**	**6000**	**0**	**0**	**6000**	**6000**	**$ 700**	**$ 700**
Semester Fees								
Tuition	15000	0	15000	0	37000	47000	1000	2000
Library	2000	2000	2000	2000	1500	1500	40	40
Miscellaneous	20000	20000	25000	25000	11500	16500	460	460
Total (Payable in each Semester)	**37000**	**22000**	**42000**	**27000**	**50000**	**65000**	**$1500**	**$2500**

- Caution Deposit of Rs. 20,000/- to be paid at the time of admission and students need to claim refund within one year of completion of the program. After one-year caution deposit will not be refunded.
- Fee structure is applicable for Ph.D. new admissions (for new entrants) from the Academic Year 2025-26 onwards.

DIAT INNOVATIVE PRODUCTS

Ananya

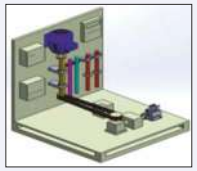
Aushada Tara

Anti-microbial body suit

Pavitrapati Mask

Atulya

Vibsim I.I



Drishti

Ashraya

OUR RECRUITERS

BrahMos, Dassault Systemes, Tata Advanced Systems, Panasonic Avionics, Paras, Bosch, BEML Bharat Earth Movers Limited, Tata Advanced Systems, Bharat Forge, C-DAC, Bharat Electronics, Larsen & Toubro, JSL Jindal Stainless, Mahindra Defence, Solar, NXP, QLabs, Tata Power Strategic Electronics Division, Tata Consultancy Services, MathWorks, Bharat Dynamics Limited, Tech Mahindra, Intel, Cummins, 3dPLM Software, Accord, Zeus Numerix, Eagle Photonics, Data Patterns, Uniphos, CommScope now meets next, Azista Aerospace, Kala Defence & Aerospace Systems Pvt. Ltd, Volvo Group, L&T Technology Services, aeron, Agnikul, sprout.ai, GE Aerospace

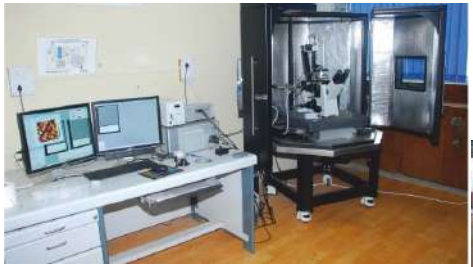
Memorandum of Understanding

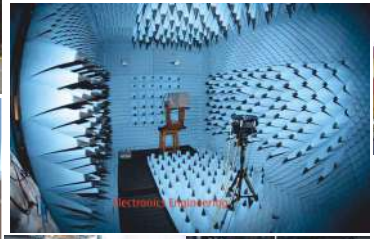
S.No.	Details of MOU
1	Government of India Department of Defence Research and Development, Ministry of Defence
3	Cranfield University, Cranfield, Bedfordshire, MK43 OAL
4	National Defence Academy (NDA), Pune
5	DRDL, Hyderabad
7	Integrated Test Centre (ITR), Chandipur
8	Indian Institute of Information Technology, Pune
9	Indian Air Force, Centre for Air power studies
10	National Technical Research Organization (NTRO)
11	Institute of Technology Management (ITM), Mussoorie
12	Indian Navy
13	IIT, Madras
18	MoU with Dassault Aviation, France
19	RUDN University, Russia
21	National Institute of Advanced Studies (NIAS), Bengaluru
22	Society for Electronic Transactions and Security (SETS), Chennai
23	Akademika Lab Solutions, Pune
24	University of the West of England (UWE), Bristol
25	National Institute of Electronics and Information Technology (NIELIT),Calicut
26	Indian Naval Academy (INA), Ezhimala (Kerala)
27	INS, Hamla, Malad West,Mumbai
28	K.V. IAT. ,Pune – LAND lease deed 1997
29	ISAE SUPAERO, France
30	ATRIA University, Bengaluru
31	National Technical Research Organization (NTRO)
32	MIST, Dhaka, Bangladesh
33	Centre for Development of Advanced Computing (CDAC)
34	Amity Universities and Institutions, Noida, U.P
35	Pune Knowledge Cluster (PKC)
36	City University, London
37	M/s Guts Electromech Ltd., Hyderabad
38	Open University, UK
39	Walchandnagar Industries Ltd.
40	SMTU, Russia
41	National Institute of Naturopathy (NIN), Pune
42	Acoustics India Pvt. Ltd, Trichi, Tamilnadu
43	Tarxya Technologies Pvt. Ltd. Bengaluru
44	VIT, Vellore
45	Zagreb University, Crotia
46	KIMS Foundation & Research Centre (KFRC), Secunderabad
47	Syncthreads Computing Pvt. Ltd. Pune
48	Bharat Forge
49	Homi Bhaba National Institute, Mumbai HBNI
50	National Academy of Defence Production (NADP), Nagpur

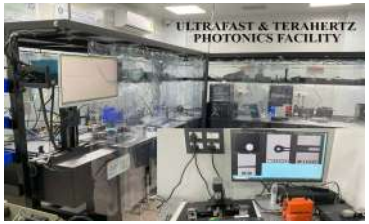
Memorandum of Understanding

51	Letter of Understanding Armoured Corps Centre & School (ACC&S) Ahmednagar
52	CSIR- CSIO (Central Scientific Instruments Organization), Sector-30C, Chandigarh - 160030
53	L&T Precision Engineering and Systems
54	NIOT Chennai
55	BITS PILANI
56	THE PENNSYLVANIA STATE UNIVERSITY
57	APT Research Foundation Pune
58	George Mason University, USA
59	Hindustan Aeronautics Ltd (HAL)
60	CEMILAC-AeSi- DIAT
61	Armed Forces Medical Services, MoD, New Delhi
62	Central Water & Power Research Station, Pune

FACILITIES & INFRASTRUCTURES







SPORTS & CULTURAL ACTIVITIES



















OUTREACH ACTIVITIES

LIFE AT DIAT












Contact Information

For M. Tech Admission	For Ph. D. Admission	Training & Placement	Hostel Accommodation
O/o Joint Registrar, Academic Section DIAT, Main Building Phone No : +91 (20) 24604411 mtech_admissions@diat.ac.in	O/o Joint Registrar, Academic Section DIAT, Main Building Phone No : +91 (20) 24604412 phd_admissions@diat.ac.in	Dean, Industry Training & Placement, POINTS Building, DIAT Phone No : +91 (20) 24604436 placementcell@diat.ac.in	Chief Warden, Hostel Management Committee (HMC) DIAT, Phone No : 91 (20) 24604442 hmc@diat.ac.in


12th Convocation-2023
Shri Rajnath Singh
Hon'ble Raksha Mantri & Chancellor, DIAT
Presides
15th May 2023 - PUNE
Dr. Samir V. Kamat
Secretary, DD R&D &
Chairman, DRDO
Shri Rajnath Singh
Hon'ble Raksha Mantri