



DIAT

Defence Institute of Advanced Technology, Pune
Deemed to be University
(Established u/s 3 of the UGC Act 1956)

Placement Brochure

2023-2024

- ▶ **NAAC NBA Accredited**
- ▶ **MHRD, Category 'A'**
Deemed to be University
- ▶ **NIRF India Rankings (2023) -**
57 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.







Dr. BHVS Narayana Murthy, FNAE, FIETE
Ex. Distinguished Scientist & DG (MSS), DRDO
Vice Chancellor, DIAT, Pune

Message from the Vice Chancellor

Defence Institute of Advanced Technology, DIAT (Deemed to be University) under the aegis of Defence R&D (DRDO) – Ministry of Defence (Govt of India), is serving the nation since 1952 in cutting-edge Defence technology by imparting higher education to Tri-services, Defence PSU's, Ordnance factories, DRDO, Industry and few friendly countries. DIAT is a specialized Academic Institution, established to cater the human resource needs of India's growing Defence and allied sectors. The Instt. is engaged in imparting technical education, in niche areas at Post-Graduate (M. Tech. & M.Sc.) & PhD levels, in various forms & capacities. DIAT alumni have been serving the Defence Sector, Industry, Academia and PSUs with great pride. I put on record and appreciate the efforts of Placement team who are in constant touch with industries for placement of our students in reputed organisations/ Industries. I am sure our recruiters will find our students competent enough with the required skillset while visiting our campus for placement. I wish everyone to succeed in their endeavours to cater to the ever-changing needs of engineering and technology and to constantly strive for a mutually beneficial relationship with industry. I look forward to an enduring and fruitful relationship with the recruiters at DIAT.

Wishing you all the best.







Dr. Pankaj Kumar Sharma
Scientist-F
Ph.D (IIT-Delhi), M. Tech. IIT Bombay
Director, Centre for Training and Placement
pankaj_sharma@diat.ac.in
placementcell@diat.ac.in | points@diat.ac.in
Tel No : 020 24604436/38 | Fax No : 020 24389411

Message from the Director, CTP

Defence Institute of Advanced Technology (DIAT) (Deemed to be University)-Pune is a leading institution of higher technical education with an excellent track record of its performance over the years. DIAT (DU) has immensely contributed for the growth and development of our nation and world, and in particular the Defence Sector. The faculty and students always strive hard to maintain its leading position in the field of engineering and technology.

The Centre for Training and placement (CTP) of DIAT (DU)-Pune organizes orientation programmes, grooming sessions, mock interview sessions for students of each stream. Besides, the Centre organizes various skill based training and internship programmes for students to provide them with hands-on experience and to introduce them to the professional environment.

CTP has a full-fledged Training & Placement Cell with facilities to conduct campus placement activities. Our campus placement activities will begin in August and continue till the month of May next year. Since our students are in great demand, we will appreciate if you would consider visiting our campus at an early date.

With warm regards and wishes.



Post Graduate Programs

M.Tech Specializations :

- Air Armament (for MoD Sponsored only)
- Guided Missiles
- UAVs
- Sensor Technology
- Lasers and Electro-optics
- Opto electronics and Communication Systems
- Radar and Communication
- Defense Electronics Systems
- Signal Processing and Communication
- VLSI and Embedded Systems
- Armament and Combat Vehicles
- Marine Engineering
- Automation and Robotics
- Mechanical System Design

- Artificial Intelligence
- Cyber Security
- Data Science
- Modeling and Simulation
- Materials Science and Chemical Technology
- Materials Engineering
- Corrosion Technology
- Nano science and technology
- Quantum Communication & Sensing
- Technology Management

M.Sc Specializations :

- M.Sc. in Material Science
- M.Sc in Applied Physics
- M.Sc in Applied Chemistry
- M.Sc in Applied Mathematics
- M.Sc in Data Science

Eligibility Criteria for civilian M Tech students :

- Graduate Aptitude Test in Engineering (GATE)
- Entrance Exam Conducted by DIAT (Self Finance)

Ph.D programmes in all the department :

Eligibility Criteria for civilian Graduate Aptitude Test in Engineering (GATE), National Eligibility Test (NET) qualified, university entrance exam and interview

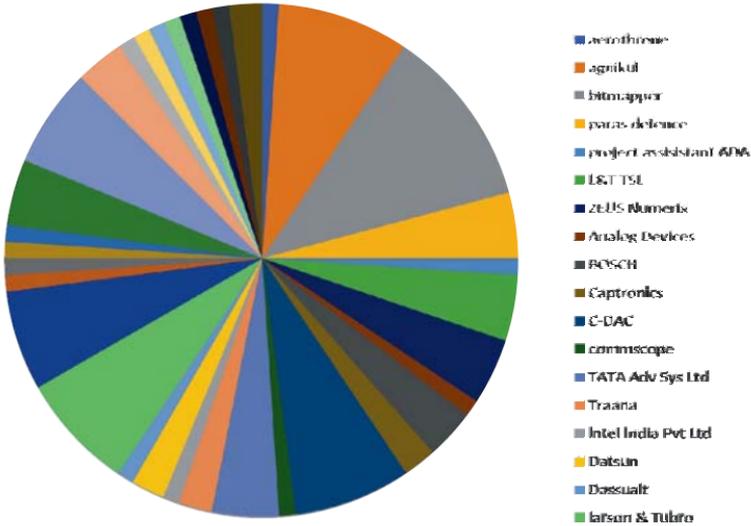
Students :

Officers of Armed Forces, Scientists of the DRDO, Technical Officers of the Ordnance Factory Board, Directorate of Quality Assurance, Public Sector Undertakings, GATE qualified civilian students and friendly foreign countries.

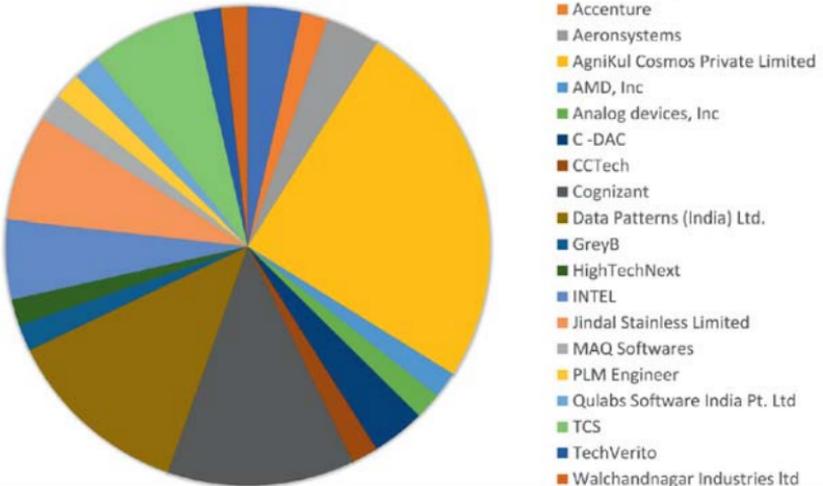


Placements Statistics

Placements 2022-23



Placements 2021-22



OUR RECRUITERS



BHARAT FORGE





Memorandum of Understanding (National)



BHARAT FORGE



Memorandum of Understanding (International)



School of Quantum Technology



Dr. G Raghavan
Professor, Director
Ph.D (Physics) IISc, Bangalore
Visiting Scientist, KFA, Juelich, Germany
Research Areas :

- Quantum Computation
- Quantum Information and Communication
- Quantum Optics
- Foundational Quantum Mechanics

Facilities

- Quantum optics laboratory
- Optics and electronic laboratory
- Advanced Quantum Technology Lab
- High performance quantum simulation and computational facility

Research Areas

- Quantum Key Distribution & Quantum communication in free Space & Optical Fibres
- Quantum Accelerator Development with FPGA
- Quantum Algorithms Development
- Quantum Simulation
- Entangled Photon Sources
- Ultra Cold Atom Physics for Quantum Sensing and Metrology



School of Computer Engineering and Mathematical Sciences



Dr. Manisha J Nene
Associate Professor & Director
M. Tech, Ph.D

Research Areas :

- Secure Cyber Physical Systems CPS,
- Secure Sensor Networks,
- Self-Organizing Networks,
- High Performance Computing,
- Quantum Computing and Algorithms.
- Advanced Persistent Threats
- Internet of Things
- Behavioural Analysis of Compute environments

Facilities

- Augmented Reality Lab
- Secure Systems Lab
- Deep Learning and Digital forensic Lab
- AI for Cyber Data Analytics Lab
- Malware Analysis Lab
- Cyber Security Lab
- Cyber Physical Systems Lab
- Modelling and Simulation / Data Science Lab

Research Areas

- Mathematical Modelling and Stimulation
- Hydrodynamics Stability
- Image Processing
- Cryptography
- Cyber Security
- Secure and Intelligent Cyber Physical System
- Penetration Testing
- Data Science
- Machine Learning
- Deep Learning
- Digital Forensics
- Malware analysis
- AI for Defence and Medical Application
- Theoretical Fluid Dynamics
- Federated machine learning
- Post quantum cryptography
- Quantum computing
- Wired and wireless network security
- Natural Language processing
- Computer Vision



Machine Learning Lab



Wireless sensor network Lab



Smart India Hackathon Award



Customised courses for Indian Navy



Department Of Metallurgical and Materials Engineering



Dr. Balasubramanian K.

Professor, HoD & Dean Academics

PhD (IPTME, UK), FIoN (UK), MIMMM C Eng (UK), FMASc,
MISAMPE, MRSI, FIE, FRSC

Research Areas :

- Polymer Engineering
- 3D/4D printing
- Green Nanocomposites
- Effluent Treatment
- High Performance Materials

Facilities

- BrabenderPlastograph
- Contact Angle
- High Temperature Wear
- Electrospinning
- High Energy Ball Mill
- Fused Deposition Modelling
- Izod Charpy Impact Tester
- HRTM, MFI, FESEM, SAXS, PPMS
- Twin Screw Extruder
- Polishing Machine
- Direct Ink Writing

Research Areas

- Polymer and nanocomposites
- Green Nanocomposites
- High Performance Materials
- Metal matrix Composite
- Soft magnetic materials
- Amorphous and nano crystal line alloys
- Nanohybrid materials for drug delivery
- Additive manufacturing
- Thermo-mechanical processing of Metallic Materials
- High Entropy Alloys
- Powder Metallurgy
- Phase-field modelling, ICME
- Machine Learning, Mesoscale modelling
- Batteries, Supercapacitors



SAXS



FESEM



HRTM



High Performance
Computing (ProLiant)



Department of Electronics Engineering



Dr. K. P. Ray
Professor & HoD
Ph.D (IIT Bombay)
Research Areas :

- Development of Microwave Sterilizer 'ATULYA' to neutralize COVID-19 DIAT/DRDO (2021)
- Development of A Medium Range (S-10km) Secured Free Space Optical (FSO) Voice Simplex Communication System For The Mission Critical Wireless Optical Link (2020-2023).
- Over the Horizon (OTH) Radar: Long term Training and Report generation for the Feasibility Study on Over The Horizon (OTH) Radar

Facilities

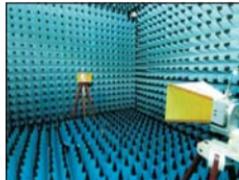
- Microwave & RF Laboratory
- Radar Systems Laboratory
- EMI/EMC/NEMP Laboratory
- Signal Processing & Communication Laboratory
- Fabrication laboratory
- SoC & Embedded Systems Lab
- Photonics System Laboratory
- Antenna Systems & Simulation Laboratory
- RFID laboratory

Research Areas

- Electromagnetics/Antenna Systems
- RF and Microwave Technology
- Radar Technology
- HPM/EW Systems
- Satellite Communications
- Wireless Power Transfer
- EMC/EMI/NEMP
- Free Space Communication and Radar Signal Processing
- FPGA Based System Designs
- RFID
- VLSI



Communication setup



Anechoic Chamber



EMI/EMC set up



Microwave Setup



Department of Mechanical Engineering



Dr. Sunil Chandel
Associate Professor & HoD
PhD (IIT Delhi)

Research Areas :

- CFD,
- Two Phase Flow
- Heat Transfer

Facilities

- Mechanical Testing Laboratory
- Fluid & Thermal Engineering Laboratory
- Vibration & Stress Analysis Laboratory
- Metal Matrix Composite Manufacturing Laboratory
- Mechanical System Design & Analysis Laboratory
- 3D Printing & Workshop
- Precision Manufactured Laboratory

Research Areas

- Blast Protection Devices
- Fluid Structure Interaction (FSI) simulation of blast resistant structures
- Nano/Micro Mechanical Behavior
- Metal matrix composite and micro machining
- Functionally graded structure
- Analysis and Design of Composite Structures
- High strain rate experimental analysis using Shock Tube
- Active & Passive flow separation control
- Two Phase flow
- Repairing Technology



3D Printing Lab



CVD Lab



MSD Lab



Vibration Lab



Department of Aerospace Engineering



Dr. Ganapati N Joshi
Associate Professor & HoD
Ph.D (IIT Delhi)

Research Areas :

- Shock boundary layer interaction and control
- Aerodynamic characteristics of grid fins

Facilities

- Aerodynamics Laboratory
- UAV Laboratory
- Computational Laboratory
- High Speed Aerodynamics Laboratory
- Control Engineering Laboratory
- Guidance Laboratory

Research Areas

- Shock wave and boundary layer interaction
- Grid fins
- UAV Design
- Flight Guidance & Control
- Aero-Thermodynamics
- Flow Control
- Propulsion



Subsonic Wind Tunnel



Buckling Machine



Missile Guidance Lab



Aeromodelling Facility

Department of Applied Chemistry



Dr. Shweta Saxena

Scientist-F (DRDO) & HoD

Ph.D (University of Delhi), M.Sc. (Biotechnology)

Research Areas :

- Functional foods
- Bioprospecting of Trans-Himalayan Medicinal Plants
- High Altitude Biology

Facilities

- NMR Spectrometer
- ICP AES Spectrometer
- TGA-FTIR spectrometer
- High Performance Liquid Chromatography
- Ion Chromatography
- UV-Visible Spectrophotometer
- Mass Spectrometer
- Vapour Pressure Osmometer
- Table-Top XRD Spectrometer
- GC-MS Chromatography
- Bomb calorimeter
- Flour sense Spectrophotometer
- Particle Size Analyzer
- Gaussian Software

Research Areas

- Development of Novel Energetic Materials
- Semiconductor / Quantum dots for photonics
- Large scale development of Nanomaterials for defence
- Metal oxide / Polymer Nano composites for EMI
- Polymer Membranes for Nuclear waste separation
- Magic sized NCs
- 2D materials and Thermoelectric
- Organic Synthesis
- Solid/Liquid Propellant
- Hazardous Material Management
- Wastewater Treatment
- Organic and Hybrid Nanomaterials
- Fluorescent Organic Nanocrystals
- Organic Photovoltaics
- Green Chemical Technology



Department of Applied Physics



Dr. Suwarna Datar
Associate Professor & HoD
Post Doctorate at IISc Bangalore
Research Areas :

- Probe microscopy
- Nanomaterials for EMI shielding
- Plasmon polariton and MEMS based sensors
- Quartz tuning fork-based sensors for gas sensing and breathomics

Facilities

- Laser & Photonics Lab
- Thin Film Research Laboratory
- Nanomaterials & Sensors Lab
- Optical Communication & Bio photonics Lab
- Device & Material Laboratory
- Ultra-Fast Photonics Laboratory

Research Areas

- Quantum Cascade Lasers
- Ultrafast Fiber Lasers
- THz TDS and imaging
- Nano-bio sensors
- Intrusion detection
- Sensors for Machine/Structural health Monitoring
- Nano bio sensors
- EMI Shielding and Stealth Materials
- Micro Fluidics
- Solar Photovoltaics
- Optical Sensors
- Metamaterials Sensors
- Metal Oxide Sensors
- Under water optical communication



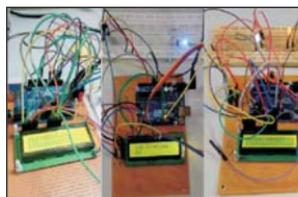
Optical Spectrum Analyzer



Pulse Laser Deposition



Laser Lab



Sensor Lab



School of Robotics



Dr. R K Satapathy
Professor & Director, School of Robotics
BSc. Engg. (REC Rourkela)
M.Tech (IIT, Madras)
PhD (AcSIR, CSIR, Ghaziabad)

Facilities

- FIRE BIRD VI – Mobile Robot Platform
- Manipulator Arm
- Self Driving Car Research Studio
- Underwater Platform for Data Extraction
- Open Manipulator
- Six Axis Articulated Robot Manipulator
- Spider Bot
- Turtlebot, Waffle pi
- Remote Operation Vehicle
- Wolf ground Robot

Research Areas

- Assistive Robotics for medical services
- Autonomous Driving Based On Deep Learning
- Biped/Quadruped Locomotion For Assistive Devices
- Robot Dynamics & Control
- Autonomous Car Driving
- Autonomous control of UAV
- Pipeline inspection Robot
- Underwater Robotic
- Aerial Robotics
- Localization and Mapping Musculoskeletal
- Simulation and Control of Exoskeleton
- Underwater Surveillance



Product sorting station system



Firebird V Hexapod



Fire Bird Vi-Mobile Robot Platform



Six Axis Articulated Robot Manipulator



Department of Technology Management



Dr. Sumati Sidharth
Associate Professor & HoD
MSc, MBA, & Ph.D
Research Areas :

- Behavioural and cognitive science
- Human Resource Management
- Strategic Management

Facilities

- ICT Based Conference Hall
- Departmental Library
- Decision Science Computer Lab

Research Areas

- Artificial Intelligence in Management
- Quality Management
- Project Management
- Logistics and Supply Chain Management
- Operations Management
- Production Planning and Control
- Industrial Engineering
- Behavioural and Cognitive Science
- Performance Management System
- Strategic Management
- Technology Management
- Human Resource Management
- Behavioural Science & Stress Management



DIAT INNOVATIVE PRODUCTS

- **Ananya**

Universal coating material to combat microbial infection and COVID-19

- Prof. Mrs. Sangeeta Kale



- **Aushada Tara**

Anti-microbial body suit which comprises of superhydrophobic, breathing, anti-microbial, comfort feeling properties. This has passed the splash resistant tests and has got good repellent property of any fluids.

- Prof. Dr. Balasubramanian K



- **Pavitrapati Mask**

Ayurvedic based Biodegradable Face Mask which will act as a virus neutralizer in order to provide resistance against the bacteria / virus.

- Prof. Dr. Balasubramanian K



- **Atulya**

Microwave steriliser to disintegrate novel Coronavirus

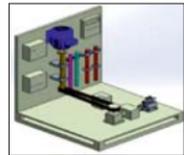
- Prof. K P Ray



- **Vibsim I.I**

Active Anti-vibration Mount System for Heavy Machineries payload.

- Prof. A.Kumaraswamy &
Lt Cdr. Anand Rengaraj



- **Drishti**

Intelligent Video based Human Activity Detection

- Dr. Sunita Dhavale



- **Ashraya**

Medical Bed Isolation System to Contain Covid-19 infections

- Dr. Pankaj Kumar Sharma



Sponsored Projects from various Agencies



Attenuation of Flowfield Unsteadiness due to Flare Induced Shock/Boundary Layer Interaction using Micro Vortex Generators - **Dr. Ganapati N. Josh**



Augmented Reality based Maintenance Trainer for Tejas Fighter Jet - **Prof C.R.S. Kumar**



Algorithms for fast computation of Principal Components for self-noise cancellation in Underwater Acoustics - **Abhilash MT**

NxxO
- GoI

Development of A Medium Range (5-10 km) Secured Free Space Optical (FSO) Voice Simplex Communication System for The Mission Critical Wireless Optical Link - **Dr. A. A. Bazil Raj**



Electrically tunable 3-3.45 micrometer quantum cascade laser for LiDAR Applications - **Dr. A. A. Bazil Raj**



Programme on Nanomaterials (2012-2018) (Co-PI):
(1) WP01: Protective Clothing (PI)
(2) WP10: High Strength Polymer Nano composites (PI)
- **Prof. Balasubramanian K.**



Analysis and Design of 3D printed Automobile Leaf Spring (2018-2020) (PI) - **Prof. Balasubramanian K.**



Characterization and Investigation of Organic capped metal oxides for Biological applications - **Dr. Himanshu Panda**



Large scale preparation of magic sized NCs funded by SPARC, Ministry of education - **Prof. PK Khanna**



Self-healing polymers for propellants ARMREB DRDO - **Prof. Shaibal Banerjee**



Non-Flammable hydrogen – DRDO - **Prof. Prashant Kulkarni**



Sponsored Projects from various Agencies



Development of Sensor array for detection of H₂S,NO,CO in breath samples of mountaineers at high altitude- DRDO
- **Prof Suwarna Datar**



Study of Physics of Failure(POF) based approach towards Reliability Enhanced of TRMs(AAAV) of phased Array radars , LRDE,DRDO - **Dr. Nilesh Ware** 10 lakhs



Spatial distribution of uranium and associated water quality parameters
- **Dr. Himanshu Panda**



Non-Linear Finite Element Analysis of Composite Valve
- **Dr. Prof. S.K Panigrahi**



Numerical Analysis on Effect of Fragment Shapes on Damage of Targets in Ballistic Applications
- **Dr. Sunil Nimje & Prof. A. Kumaraswamy**



Numerical and Experimental Investigations on Formability of Thin Metal Foils in Micro Forming for Aerospace Applications
- **Prof. D.G. Thakur**



Analysis and Design of 3D printed Automobile Leaf Spring
- **Dr. Sunil Nimje & Prof. Balasubramanian**



A study and identification of Critical Success Factors for projects in Pune based DRDO laboratories
- **Dr. Sumati Sidharth**



Studies on Self-Healing properties of microencapsulated species in HTPB based Binder system
- **Dr. Shaibal Banerjee**



Design and Fabrication of wide-band rejection shields using multilayers of periodic resonator arrays and carbon-based nanocomposites
- **Prof. Sangeeta Kale**



DETAILS OF PATENTS OF DIAT (DU) GRANTED SINCE 2021

Title of Patent	Patent No	Granted On	Inventors
Bearing Fault Detection	373427	30/07/2021	Dr. S K Panigrahi, Shri.Sunil Tyagi
A Process For Preparing Hypergolic Zwitterions From Udmh And Allyl Imidazole	375148	24/08/2021	Dr. P S Kulkarni, Dr Shruti Aditya Karnik, Mr. Vikas Bhosale
System for Exfoliation and Dispersion of Nanoparticles in Polymer Composite Matrix	378591	04/10/2021	Dr. Balasubramanian K
Device And Process of Making Nanoparticle Drug Complexes	384046	10/12/2021	Dr.Tejasree Madhav Bhawe, Dr. V Naresh Kumar, Mr. Sanjay Harivijay Sahare, Dr. Sunil Chandel
Process For Preparation Of Hydrophobic And Oleophilic Reticulated Vitreous Carbon (RVC) Foam	383723	06/12/2021	Dr. T U Patro, Rohit Dnyaneshwar Bagal, Devesh Kumar Chouhan
Method for the preparation of Antimony Oxide Nano Particles	395733	28/04/2022	Dr. P K Khanna, Dr. P V More, Ms. Prachi Upadhyay
A Composition For Manufacturing A Building Material	405077	30/08/2022	Dr. Kumaraswamy
A framework of trust evaluation of a plurality of nodes deployed in a wireless sensor network	414904	19/12/2022	Dr. Manisha Nene, Mr. S Desai
Secure Mobile Anti-Tapping Device (SMATD)	414188	15/12/2022	Dr. C R S Kumar
A Road Structure and a process for preparing the same	427946	07/04/2023	Dr. Balasubramanian K, Mr. Sachin A Jadhav
Selective Retrieval of Thorium (IV) and Uranium (VI) Ions Using Eco-Friendly Cellulose Composite	432851	25/05/2023	Dr. Balasubramanian K, Dr. Renuka R Gonte, Mr. Parth Bhalara, Mr. Deepesh Punetha, Mr. Prashant B Rule
A Method of Trust Evaluation of a Node by itself	437134	06/07/2023	Dr. Manisha Nene, Sh. S Sandeep Desai

PATENT APPLICATIONS OF DIAT (DU) SINCE 2021

Title of Patent	Patent No	Granted On	Inventors
A PHASE CHANGE MATERIAL AND A PROCESS FOR PREPARING THE SAME	455418	27/09/2023	Dr. Prashant S Kulkarni, Ms. Madhura Deshpande, Ms. Swati Sundarajan
A STRIP FOR MERCURY ION DETECTION	461138	20/10/2023.	Dr. P K Khanna, Dr.Priyesh Vilas More
Robotic gripper with over constrained linkages	507871	07/02/2024	Dr. Kumaraswamy, Ms. Esha Chakraborty
Polymer Membrane and Process for Preparing the same	506184	01/02/2024	Dr. Balasubramanian K, Mr. Ramdayal, Mr. Fuhar Dixit, Mr. Tushar Sahitya
Skewed Grid Fin For Aerospace Applications	483886	05/02/2024	Dr. Ajay Misra, Dr. Mahesh MS, Manish Tripathi
Process for the preparation of Molybdenum Dioxide Nano Particles from MoO ₃ product thereof	485470	02/02/2024	Prof. P K Khanna, Ms. Priyanka
Indian Design Application			
Conical Doser with A helical Blade	399481 -001	08/11/2023	Secretary, Defence Research & Development Organisation, Prof. Balasubramanian Kandasubramanian, Vishwanath Gholap, Dhruv Patil, Tharikha Joseph, Priyanka Patil
Hexagonal Hopper with Tirangular folds	399480 -001	08/11/2023	Secretary, Development Organisation, Balasubramanian Kandasubramanian, Vishwanath Gholap, Dhruv Patil, harikha Joseph, Priyanka Patil



Life at DIAT





Social / extra Curricular Activities



Social Activities carried out as a part of Swacha Bharat Abhiyan
NSS Blood Donation Camp on 21st Feb 2024
NSS Special Camp on 19th - 25th Feb 2024