

DEPARTMENT OF GREEN ENERGY TECHNOLOGY

Madanjeet School of Green Energy Technologies



PONDICHERRY UNIVERSITY

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Pondicherry University, standing 8th among Central Universities and 58th among top Indian Universities in NIRF 2022 ranking, -is one of the most sought-after campuses among the students from across the nation as a destination for the Higher Education and Research. Pondicherry University has 15 Schools, 38 Departments, 11 Centers and 1 Chair offering over 144 PG, PG-Diploma certificate & Research programmes with a student strength of 7000 including foreign students. Currently the University has more than 130 funded research projects including SAP & FIST Projects from various agencies like UGC, DST, CSIR and DBT.

The University has two-off campuses, one located in Port Blair (Andamans) with two Departments viz., Ocean Studies and Marine Biology and Coastal Disaster Management and another Post-Graduate Centre at Karaikal. Fresh green sprawling campus spread over 880 acres, Pondicherry University features 100% Wi-Fi enabled campus with 100% power back-up, 24x7 Library facility, 22 well-furnished hostels, Round the clock medical facility, Placement Cell, Community Radio (Puduvai Vaani) and Study India Programme.



ABOUT – DEPARTMENT OF GREEN ENERGY TECHNOLOGY

The field of Green Energy Technology (GET) encompasses a continuously evolving group of methods, materials and processes from environmentally benign techniques for generating energy to its minimal utilization for maximal production of end materials, and utilization of waste products when generated. This is being addressed through Sustainable Development concepts.

Established as Centre in 2010, under the aegis of Madanjeet School of Green Energy Technologies has been elevated to Department of Green Energy Technology in 2020, with a vision to promote education and research in environmentally clean methods of energy production, conservation and utilization. The department offers M. Tech. in Green Energy Technology, which is partly supported by South Asia Foundation (SAF). The Ministry of New and Renewable Energy (MNRE) has recognized and approved the department as a Nodal Centre. Our Department building is suited in a “GRIHA” Certified Green Energy Building.



The department promotes research in the fields of all clean sources of energy production, conversion and utilization like solar photovoltaic, solar thermal, energy storage, fuel cells, bio-fuels, wind energy, ocean energy, chemical energy, applications of nanotechnology for energy conversion, *etc.* The department has well trained faculties to teach, offer consultancy and take up research work in many core areas of green energy technology.

VISION AND MISSION

- To teach, train and carry out research and development in niche areas of renewable energy technologies to contribute to energy self-sufficiency.
- To develop trained human resources to cater to the needs of existing and emerging renewable energy industries.
- To develop human resources to pursue cutting-edge and futuristic research in energy technologies.
- To become the nodal center to deliver consultancy and offer expertise to industries, governmental organizations, and entrepreneurs.
- To emerge as a hub for technology development, incubation and validation.

DEPARTMENT ACHIEVEMENTS

Recognized as Centre of Excellence in Green Energy Technology by MNRE., Govt. of India

Graduated more than 250 M.Tech. students including SAF students. About 50 M.Tech alumni got admission to Ph.D. in India and abroad

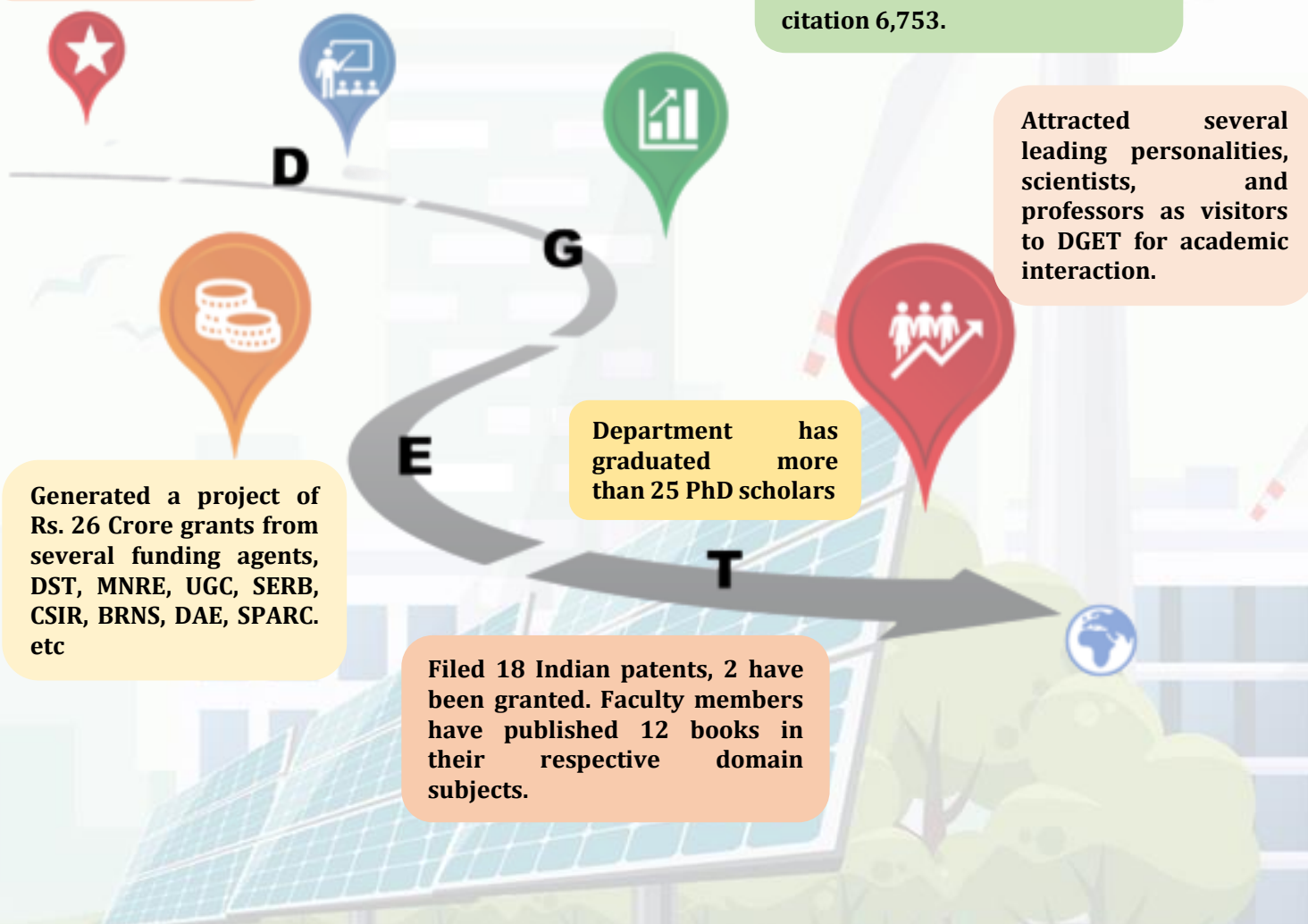
Department has published 220 peer review UGC indexed journal papers with the cumulative h-index of 15.3 and citation 6,753.

Attracted several leading personalities, scientists, and professors as visitors to DGET for academic interaction.

Generated a project of Rs. 26 Crore grants from several funding agents, DST, MNRE, UGC, SERB, CSIR, BRNS, DAE, SPARC. etc

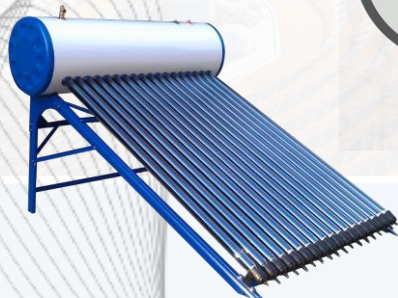
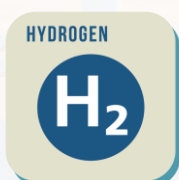
Department has graduated more than 25 PhD scholars

Filed 18 Indian patents, 2 have been granted. Faculty members have published 12 books in their respective domain subjects.



THRUST AREAS OF TEACHING & SKILL DEVELOPMENT

- Solar Photovoltaics
- Solar Thermal Energy
- Bioenergy/Biofuels
- Wind/Ocean/Tidal Energy
- Clean Combustion
- Energy Materials
- Energy Conversion/Storage
- Computational in Energy
- Energy Audit and Management
- Green Building/Sustainable Technologies



SALIENT FEATURES

- ✓ Device-based program
- ✓ Industry-linked projects
- ✓ Training on state-of the-art instruments
- ✓ Major Projects in Industry/ Institutions
- ✓ Group projects in select courses
- ✓ Course projects to impart practical skills

Department	:	Cumulative i10-index: 248 h-index: 169
Outstanding recognitions	:	MNRE CoE & SAF Sponsor
Faculty strength	:	12
Courses offered	:	M.Tech & Ph.D.
Fund receiving agents	:	SAF, DST, SERB, UGC, MHRD, Raman Fellowship, MHRED SPARC Project & DST Consortium



SOLAR



WIND



HYDRO



BIOMASS



NUCLEAR



GAS



COAL

M.TECH. PROGRAMME

The major subject areas covered in this program include alternate energy sources - **solar photovoltaics, solar thermal, biofuels, wind energy, energy generation and utilization, clean combustion technology, green nanotechnology, waste to energy, catalysts and bio-catalysts, energy storage and thermal storage materials, polymeric materials, etc.** The course is aimed to train talented students in the area of renewable energy technology to create scientifically and technologically skilled manpower. This program is designed for two years spread into four semesters. The course structure is framed with both hardcore and softcore courses to substantiate both theoretical and along technical understanding of subjects with handful of experiences. In addition, there will be some bridge courses. Most of the first semester courses will be on energy and modelling. In the second and third semester courses will be based on energy, environment, chemistry, management and other GET related fields. Students will select courses suiting background and interest.

ADMISSION INTO M. TECH.

Admission of this course is done based on the marks secured in the Common University Entrance Test (Postgraduate) CUET (PG) conducted by National Testing Agency (NTA). Kindly Find more information about the entrance test at <https://cuet.nta.nic.in/>.

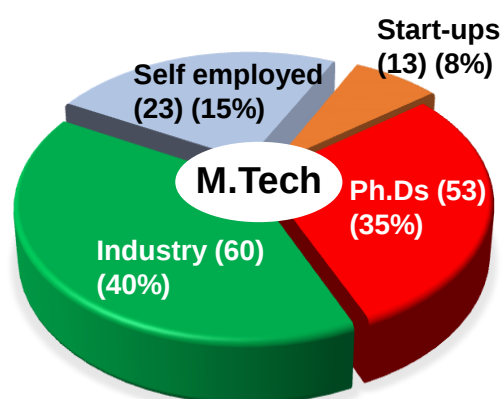
ELIGIBILITY

B.E/B.Tech in Mechanical, Electrical, Electronics, Chemical or Biotechnology or M.Sc. in Physics, Chemistry, Material Science, Microbiology, Nanoscience or Photonics with Mathematics at B.Sc. level with at least 55% marks in the qualifying examination.

FELLOWSHIPS

The meritorious candidate from the entrance exam will be eligible for a minimum of 2 "SAF Fellowship". In addition, there are 2 number of MNRE fellowships available for GATE-qualified students to carry out M.Tech.

PLACEMENT RECORD



SEMESTER-I

Hard-Core Course

- Energy, Environment and Renewable Energy Technologies
- Bioenergy and Conversion Systems
- Fuels, Combustion and Cleaner Technology
- Computational Fluid Dynamics for Energy Engineering
- Solar Thermal Energy Conversion
- Modelling and Simulations of Green Energy systems

Soft-Core Courses

- Electrical Energy Systems
- Nanomaterials: Properties, Synthesis, Characterization and applications
- Practical: Energy Laboratory –I

SEMESTER-II

Hard-core Course

- Solar Photovoltaic Energy Conversion
- Electrochemical Energy Conversion and Storage
- Wind Energy Technology
- Bioprocess Engineering for Biofuels
- Solar Thermal Devices and Thermal Energy Storage
- Green Building & Sustainable Development

Soft-core courses

- Solid Waste Management to Energy Conversion
- Nanotechnology for Solar Energy Systems
- Carbon Sequestration at the Landscape level
- Microbial Technology for Biofuel Production
- Green Chemical Technologies
- Practical: Energy Laboratory –II

SEMESTER-III

Hard-core Course

- Research Methodology & Mini-Project

Soft-core Courses

- Solar Photovoltaic Power Systems
- Artificial Intelligence, Machine Learning & Data Analysis for Photovoltaic Systems
- Advance Materials for Renewable Energy Systems
- Industrial Energy Audit & Management
- Advanced Battery and Fuel Cell Technologies
- Electric Vehicle Technology
- Advanced Wind Energy Conversion System

- Bio refineries
- Anaerobic Digestion & Biogas Technology
- Alternate Materials for Sustainable Technology
- Biomass Feedstock & Solid Biofuel Production
- Organic Photovoltaics
- Practical: Energy Laboratory – III

SEMESTER-IV

- Green Energy Technology Dissertation & Viva-Voce

OTHER SOFT-CORE COURSES

- Green Management
- Bio Industrial Skills
- Bioprospecting Technology for Biofuel production
- Micro Hydropower Energy System
- Sustainable Technologies for Valorization of Waste Carbon Feedstocks

Ph.D. PROGRAMME

DGET offers Ph.D. programme to carry out research and development in the field of Photovoltaics, Solar Thermal, Energy Materials, Energy Storage, Energy Devices, Fuel Cells, Green Chemistry, Bio Energy, Technology development in the field of Solar Concentrators and other Solar Thermal Devices and Hybrid Clean Energy Systems.

Ph.D. ADMISSION

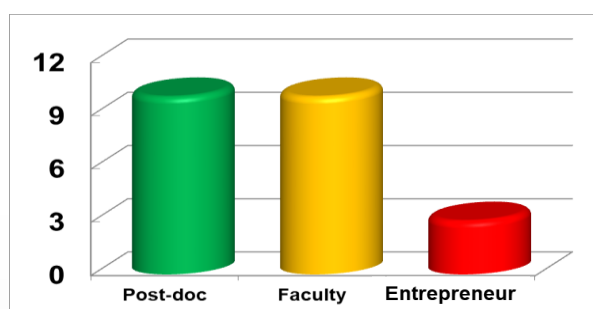
The Candidates are admitted to Ph.D. through Entrance Exam conducted by NTA through CUCET or through National Eligibility Test conducted by UGC/ CSIR or such other National Level examination recognized by the University as equivalent and awarded a Junior Research Fellowship (JRF) for pursuing doctoral research. Kindly find more information about the university admission process at <https://www.pondiuni.edu.in/>. Currently only fulltime regular PhD programme is offered.

ELIGIBILITY

- M.Sc. in Physical science, Chemical science, Biological science, Microbiology, Materials science or equivalent degree,
- M.Tech. in Green Energy Technology, Nano science and Technology, Biotechnology,
- M.E. Mechanical, Electrical, Power systems or equivalent with at least 55% marks or equivalent grade in qualifying examination.

PLACEMENT RECORD

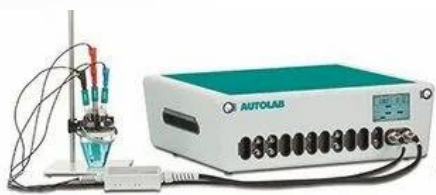
Ph.D Graduate Placements



INFRASTRUCTURAL FACILITIES

DGET has various instrumentation facilities for teaching and research activities.

Electrochemical Workstation



BET Surface Area Analyzer



UV – Visible Spectrometer



Solar Simulator (Class AAA) 94043 A



Quantum efficiency Measurement



Rotary Evaporator



Solar Thermal Energy Laboratory



Wind Energy Simulator



OUR FACULTY MEMBERS



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INDUSTRIAL AND ACADEMIC COLLABORATIONS

MOU with Organization

- ❑ South Asian Foundation

Collaborating Institutions

- IISc Bangalore
- CPRI Bangalore
- IIT Madras
- CECRI Chennai & Karaikudi
- Anna University Chennai
- Jamia Millia Islamia
- IGCAR, Kalpakkam
- ICGEB, New Delhi
- Federal University Of Bahia, Brazil
- Federal University Of Rio De Janeiro, Brazil
- Instituto Politecnico Nacional, Mexico
- Universiti Tenaga Nasional, Malaysia

Industry – Institutional Interaction

- AFFIMAX, Pondicherry.
- Krast Work Solar, Kochi.
- Mitrabitae, U.K.
- High Energy Battery Ltd., Tamil Nadu
- Maharishi Solar
- Auroville

Start-up initiated by Alumnus

- ✓ FIREKUBES, Rajasthan.
- ✓ Greenergy Solar Pvt. Ltd.
- ✓ CQuest BioSolutions Pvt. Ltd.
- ✓ Xenobiomics Pvt. Ltd.
- ✓ Spektron Solar, (Installation & Training)

CONTACT DETAILS

The Head

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