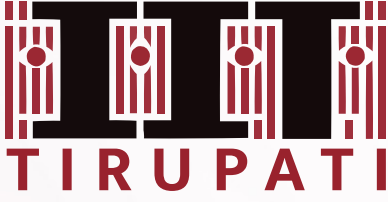
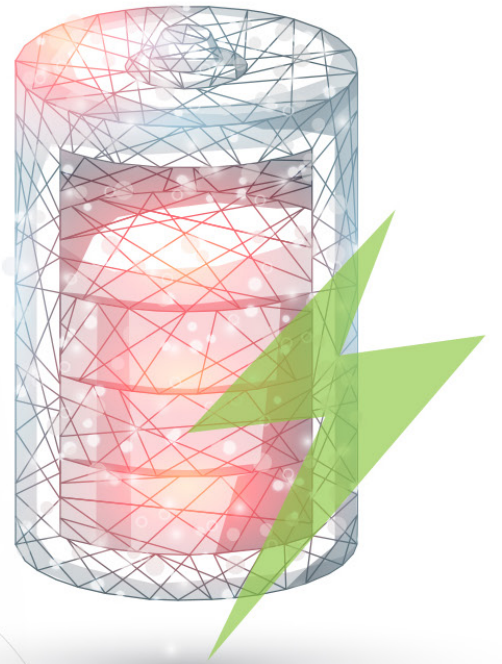


भारतीय प्रौद्योगिकी संस्थान तिरुपति



**M. Tech. in
Advanced Energy
Storage Technology:**
an Industry-Sponsored
Program at IIT Tirupati



Director's **Message:**

Greetings from IIT Tirupati!

Energy storage technology is the backbone of the global energy transition. At IIT Tirupati, we have identified several thrust areas that are global, cutting-edge, aligned with national missions, and are locally relevant. Over the last few years, IIT Tirupati has been in discussions with various national bodies, such as the Department of Science and Technology, and various industry partners on structuring the research and training programs in energy storage to support the country's transition towards self-reliance, through the Atma Nirbhar Bharat initiatives. Towards this, in consultation with the industry partners, such as Amara Raja Group and JSW Group, an M.Tech program in energy storage has been proposed. The program has been made as flexible as possible so that industry participants can benefit from it. The proposed M. Tech program will provide an opportunity for upscaling for energy markets with a global push towards electrification and renewable integration. Professionals will gain cutting-edge knowledge of battery systems, thermal management, renewable energy, solar, wind energy, and storage skills that are in high demand across various industries like electric vehicles, power utilities, and smart grids. The program will bridge the gap between theory and practice, helping the participants accelerate their careers. The program has been made flexible for working professionals. Classes are to be held in the evenings and over the weekends. It is proposed that the students will spend two weeks in the first two semesters at IIT Tirupati to undergo laboratory training related to the courses and be in touch with the faculty members. The M. Tech project can be executed in the industry where they are working. With its rigorous academic environment, research-driven eco-system, and strong industry collaboration with a strategic focus on energy storage, IIT Tirupati is uniquely placed to deliver this proposed M. Tech program, which will benefit industry professionals.



Thank you,

Prof. K. N. Satyanarayana
Director



Why **M. Tech in Advanced Energy Storage Technology?**

India's Net-Zero 2070 vision depends on scalable and sustainable energy storage solutions, essential for accelerating electric vehicle adoption, decarbonizing the power grid, and reducing reliance on fossil fuels. The M. Tech. program is designed to equip professionals with multidisciplinary expertise across materials science, electrochemistry, power systems, and energy economics, empowering to lead the transformation toward a cleaner, energy-secure future.

Why IIT Tirupati?

IIT Tirupati (IITT) is rapidly emerging as a hub for renewable energy, electric vehicles, and battery manufacturing, leveraging its strategic location within the national energy corridor. Energy is a key focus area at IITT, and the institute collaborates closely with the Government of India on several major national missions. With a strong emphasis on excellence and innovation, IITT is nurturing a new generation of graduates poised to drive significant breakthroughs in the energy sector.



Program Objectives

- Provide a broad perspective to industry professionals in energy storage and battery systems
- Foster interdisciplinary knowledge across materials, energy, power systems & policy
- Inform global cutting-edge technologies and their translation to the Indian ecosystem
- Enable applied research through academia-industry collaboration

Program Highlights

- Upskilling for professionals in energy, materials, and manufacturing.
- Highly Multidisciplinary Chemical, Electrical, Mechanical, Materials, Chemistry & Policies
- Taught by experienced faculties; Senior industry professionals as guest lecturers
- No GATE requirement

Eligibility Criteria

- Four-year Bachelor's in engineering, Science or Master's in Science
- Minimum two years of industrial experience
- Sponsored by current employer

Who can apply?

Professionals working in Energy Industries, Battery Technologies, Electric Vehicles Sector, Power Generation, Renewable Energy, Power Systems, Materials & Chemical Processing

Program Structure

Duration:	2 years
Courses:	Live online (synchronous)
Campus immersion:	2 weeks each in Semesters I and II
Curriculum:	4 core courses, 5 electives, 2 labs, and a project
Sessions:	Weekdays after 5 p.m. & Saturday mornings
Evaluation:	Exams and Project Reviews

Program **Tracks**

Electrochemical Storage Systems

1. Battery Manufacturing Technology
2. Materials Design for Electrochemical Storage
3. Battery Cell Modelling and Diagnostics
4. Nanochemistry: Principles and Applications

Energy Transmission and Distribution

1. Energy Storage System Applications for Modern Power Grids
2. Introduction to Smart Grid Technology
3. Advanced Power Electronics
4. Wind Turbine Systems

Emerging Energy Technologies

1. Hydrogen Production, Storage, and Safety
2. Semiconductors and Photovoltaics
3. Machine Learning in Process Engineering
4. Transport Processes

Energy Management, Economics, and Sustainability

1. Engineering Economics and Sustainability
2. Project Management
3. Supply Chain Management
4. Sustainability Science and Governance

Program **Fees**



Sponsorship fee: ₹ 7 lakhs per candidate inclusive of tuition

Accommodation will be provided during the residency period

M. Tech project expenses borne by the sponsoring industry

Important **Dates**



Announcement:	2 nd week of July 2025
Nomination deadline:	4 th of August 2025
Online interviews:	11 th of August 2025
Results announcements:	14 th August 2025
Program Starts:	1 st September 2025

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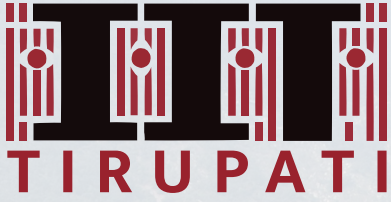
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