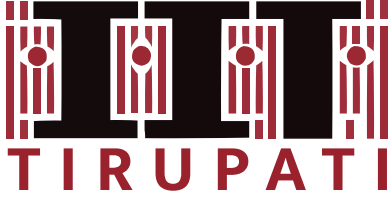


भारतीय प्रौद्योगिकी संस्थान तिरुपति



eCampus M.Tech. in Advanced Energy Storage Technology



Director's Message

Greetings from IIT Tirupati!

Energy storage technology remains backbone to the global transition towards achieving sustainable and reliable energy systems. Building on the strong foundation established in its inaugural year (2025), Indian Institute of Technology Tirupati continues to expand and strengthen its M.Tech. program in Energy Storage, with a clear focus on academic excellence, industry relevance, and national priorities. Over the past year, the program has matured through active collaboration with national agencies such as the Department of Science and Technology and leading industry partners including the Amara Raja Group and JSW Group. These partnerships have enabled continuous refinement of the curriculum, ensuring that it reflects emerging trends in electrification, renewable integration, and advanced energy storage technologies, while supporting India's vision of self-reliance under the Atma Nirbhar Bharat initiative. 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. The M.Tech. program was well-received by several industrial professionals, leading to greater success during the first year. Along with the inputs from industry stakeholders and feedback from the first cohort, the program now offers an even more robust learning experience that blends theoretical depth with practical relevance on energy domain. IIT Tirupati's research-driven ecosystem and deep industry engagement are well-positioned to develop skilled professionals who will contribute to the future of energy storage and sustainable technologies.



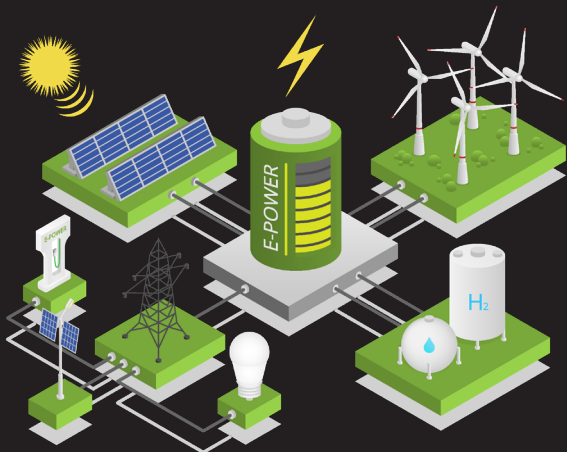
Thank you,

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 Technology, 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

Eligibility Criteria

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

Who can apply?

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

Program Highlights

- Upskilling for professionals in energy, materials, and manufacturing.
- Highly Multidisciplinary Chemical, Electrical, Mechanical, Materials, Chemistry & Policies
- Taught by faculty with industry experience; guest lectures from senior industry professionals
- No GATE Required

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 |

Testimonials of M.Tech. AEST Students – 1st Batch (Year 2025–27)

“This Online M.Tech. program in Advanced Energy Storage Technology is very useful for working professionals, as it balances studies with job responsibilities. The on-campus lab sessions; exams give a real campus feel and practical exposure. What we learn can be easily connected to our daily work, and applying it helps improve our productivity. Learning from PhD-qualified professors helps in gaining deeper technical understanding. Overall, it supports career growth and development.”

 Parsi Naga Venkata Siva Vishnu Vamsi

“The course is well-designed and covers everything from manufacturing and applications to economics and future technologies. Coming from the hydro sector, it has given me a new perspective on electrochemical storage and its role in the grid. The teachers at IIT Tirupati are very polite and have excellent pedagogy, making learning clear and engaging. With strong academic support and hands-on lab experience, I feel confident to work in the battery and EV industry.”

 Vishesh Garg



“The following are the key things that helped me get through this program

- The MTech program provided a demanding curriculum that effectively connected theoretical concepts with practical applications.
- The learning outcomes have significantly improved my problem-solving abilities and technical knowledge, and made me prepared for the industry.
- The experience was transformative, enhancing my confidence and career opportunities.”

 A Uma Maheshwar Reddy

“Thank you for asking us to share our experience. So far, my journey at IIT Tirupati has been really meaningful and has helped me grow a lot in my learning. We have completed the first semester and are about to finish the second one soon and during this time I have slowly built a strong understanding of the concepts along with some practical exposure in advanced energy storage systems. It has been a valuable learning experience for me.”

 Bandaru Naga Siva Rama Krishna

“The M.Tech. in Advanced Energy and Storage Technologies has been a transformative experience, perfectly bridging the gap between academic theory and industrial application. The curriculum’s focus on various battery technology, thermal management and cell characterization has provided me with the technical expertise and research mindset necessary to tackle real-world energy challenges. Thank you for the opportunity to contribute.”

 Sangoji Sai Chandu

- “Coming from a background primarily focused on lead-acid batteries, this course significantly broadened my understanding of emerging energy storage technologies like lithium-ion and sodium-ion batteries and next-generation battery chemistries like metal-sulfur and zinc-ion batteries, etc.
- It provided comprehensive exposure to modern systems, along with valuable insights into renewable energy integration, energy conversion technologies, and their economic and practical implications.
- The course has helped me develop a more holistic perspective on current and future energy storage solutions.”

 Jakkala Pavan



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. Transport Processes
4. Machine Learning in Process Engineering

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 will be borne by the sponsoring industry or the self-sponsored candidate.

Important Dates

| | |
|--|----------------------------|
| Announcement / Start of Receiving Applications | 23rd April 2026 |
| Webinar Date | 7th May 2026 |
| Last Date of Application | 1st June 2026 |
| Interviews of Shortlisted Candidates | 2nd Week of July 2026 |
| Announcement of Selected Candidates | 3rd Week of July 2026 |
| Selected Candidates Arrive for On-Campus Orientation | 16th August 2026 |
| On-Campus Orientation Concludes / Candidates Depart | 17th August 2026 (Evening) |

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