

Resource Persons

- **Dr. N. Satyanarayana**, Professor, Pondicherry University, Puducherry.
- **Dr. Ramaswamy Murugan**, Professor, Pondicherry University, Puducherry.
- **Dr. M. Deepa**, Professor, Department of Chemistry, IIT Hyderabad.
- **Dr. Surendra Kumar Mohanta**, Associate Professor, Department of Chemistry, IIT Hyderabad.
- **Dr. A. Vadivel Murugan**, Professor & Head, Centre of Nanoscience & Technology, Pondicherry University.
- **Dr. M. Venkateswarlu**, R& D Manager, Amaron Batteries, Tirupati.
- **Dr. Kusum Kumari**, Assistant Professor, Department of Physics, NIT Warangal.
- **Dr. K. Uday Kumar**, Assistant Professor, Department of Physics, NIT Warangal.
- **Dr. R. Balaji Rao**, Professor & Head, GITAM University, Hyderabad
- **Dr. I. Prakash**, Associate Professor, Sastra University, Tamilnadu.
- **Dr. Himadri Tanaya Das**, Utkal University, Bhubaneswar.

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AICTE Training and Learning (ATAL) Academy

FIVE DAYS

Faculty Development Programme

ON

Energy Storage

17th to 21st May, 2021

Organized by

Department of Physics,
Freshman Engineering,



Institute of Aeronautical Engineering

An Autonomous Institute

Dundigal, Hyderabad-043, Telangana, India.

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ABOUT THE FDP

Energy is the driving force behind all economic activities. Energy storage systems are essential to the operation of electrical energy systems. They ensure continuity of energy supply and improve the reliability of the system by providing excellent energy management techniques. Energy storage systems can be in many forms and sizes. Energy can be stored as potential, kinetic, chemical, electromagnetic, thermal, etc. Some energy storage forms are better suited for small-scale systems as well as for large-scale storage systems. Some of the energy storage systems are chemical batteries, fuel cells, ultra-capacitors, super capacitors, superconducting magnetic energy storage (SMES), and fly wheels etc. The potential application of energy storage systems includes utility, commercial & industrial, off-grid & micro-grid systems. Energy storage systems help with frequency regulation, can reduce a utility's dependence on fossil fuel generation plants, and shifting to a more sustainable model over time. Renewable with energy storage can act as the base load power source of a micro grid and reduce the use of fossil-fuel based generators. The proposed program covers energy storage systems and applications, including the various methods of energy storage and their incorporation into and integration with both conventional and renewable energy systems.

ABOUT THE INSTITUTE:

Institute of Aeronautical Engineering (IAE) was founded in the year 2000 with the vision of becoming a center of excellence in the field of Engineering and Technology related emerging areas of education, training and research comparable to the best in the world for producing professionals who shall be leaders in innovation, entrepreneurship, creativity and management. Started with aircraft maintenance engineering in the year 1994, It has gradually transformed itself into a premier integrated interdisciplinary technological institute offering UG and PG programmes in CSE, IT, CSE (AI&ML), CSE (DS), CSE (CS), CSIT, ECE, EEE, AE, ME and CE and MBA. IAE has been ranked one among the top 5 Private Engineering Colleges in Telangana. It is the most preferred institution for aspiring students and their parents with the 100% admissions in the state of Telangana.

ABOUT THE DEPARTMENT

The Department of Freshman Engineering is one of the pioneering departments of Institute of Aeronautical Engineering. The present faculty strength is 40. About 150 research papers have been published in International journals and about 200 papers in International/National conferences. The basic motto of department is to provide quality education through its highly qualified and experienced faculty members.

TOPICS TO BE COVERED IN THE FDP

- Energy Storage An Overview
- Research challenges in use of Nanomaterials energy storage applications
- Material Prospective for Lithium-Ion battery application
- Recent Advances in Energy Storage Applications
- Synthesis of Nanostructured Electro chromic device Applications
- Material Prospective for Lead-acid battery applications
- Recent research progress on super capacitor technology
- Material Prospective for Sodium-Ion battery application
- Material Prospective for Super capacitor applications
- Electrolytes for Li-ion battery Applications
- Solution Processed Solar Cells and Dual Function Devices
- High Performance Supercapacitors
- Material Prospective for Lithium-Sulfur Applications

Registration Fee: No registration fee

Target Participants: Faculty members from AICTE approved institutions, Research Scholars, Industry personnel & PG students Participants from the Government & Industry

Max. No. of Participants: 200 Nos.

Mode of Delivery: Live web sessions through Online Platform

Requirements to get E-Certificate:

1. Smart phone with good internet facility
2. Minimum 80% attendance is required for the whole course
3. Minimum 60% marks should be obtained in the Final test to be conducted online at the end of FDP





INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal, Hyderabad -500 043

SCHEDULE FOR A 5 DAY FACULTY DEVELOPMENT PROGRAMME

ON

Energy Storage

(17th to 21st May, 2021)

Day and Date	SESSION-I 10.00-11.30		SESSION-II 11.45-01.15		SESSION-III 14.30-16.00
17-05-2021 (Mon)	Inaugral Session Energy Storage An Overview Dr. Surendra Kumar Mohanta, IIT Hyderabad	Tea Break	Research challenges in use of Nanomaterials energy storage applications Dr. N. Satyanarayan, Professor, Pondicherry University	Lunch Break	Material Prospective for Sodium-Ion Battery application Dr. R. Balaji Rao, Professor, Gitam University, Hyderabad
18-05-2021 (Tue)	Electrolytes for Li-ion battery Applications Dr. Ramaswamy Murugan Professor, Pondicherry University		Recent research progress on super capacitor technology Dr. Kusum Kumari NIT WARANGAL		Material Prospective for Lead-acid battery applications Dr. M. Venkateswarlu, Amaron Batteries
19-05-2021 (Wed)	Material Prospective for Li/Na- Ion Battery Applications Dr. Surendra Kumar Mohanta, IIT Hyderabad		Recent Advances in Energy Storage Applications Dr. M. Venkateswarlu, Amaron Batteries		Material Prospective for Lithium- Sulfur Applications Dr. Himadri Tanaya Das Utkal University
20-05-2021 (Thu)	High Performance Supercapacitors Dr. M. Deepa, Professor, IIT Hyderabad		Material Prospective for Lithium-Ion battery application Dr. N. Satyanarayan, Professor, PU		Material Prospective for Super capacitor applications Dr. Himadri Tanaya Das, Utkal University
21-05-2021 (Fri)	Solution Processed Solar Cells and Dual Function Devices Dr. M. Deepa, Professor, IIT Hyderabad		Test for Participants		Valedictory Session Vote of Thanks By Dr. K. Hari Prasad