



**ATAL AICTE ONLINE
FACULTY DEVELOPMENT PROGRAMME (FDP)**

ON

**ADVANCES IN CLEAN ENERGY CONVERSION
TECHNOLOGIES & MATERIALS FOR ENERGY STORAGE
APPLICATIONS**

21st to 25th September 2020

Organized by:

**SCHOOL OF MECHANICAL ENGINEERING
SHRI MATA VAISHNO DEVI UNIVERSITY
KAKRYAL. KATRA-182 320, (J&K)**

www.smvdu.ac.in

In association with



**AICTE TRAINING AND LEARNING (ATAL) ACADEMY
ALL INDIA COUNCIL FOR TECHNICAL EDUCATION (AICTE)
MINISTRY OF EDUCATION
GOVERNMENT OF INDIA**

Registration Link: <https://www.aicte-india.org/atal>

ABOUT THE UNIVERSITY

Shri Mata Vaishno Devi University (SMVDU) has been established by an Act of J&K State Legislature as an autonomous, highly technical and fully residential University. The University is recognized under section 12(b) and 2(f) of University Grants Commission Act 1956. The University provides quality education in the fields of Engineering, Sciences, Management, Philosophy and other subjects of contemporary importance. The University Ranked 78th among Engineering Institutions in National Institutional Ranking Framework (NIRF 2020) declared by MHRD, GoI and 71st globally in Time Higher Education ranking in SDG category. SMVDU is located at a distance of 40 km from Jammu, which is well connected by Air and Train from all the major cities of the country.

ABOUT THE SCHOOL

The School of Mechanical Engineering, in SMVDU came into existence in the year 2006, when the first batch started off with a total number of 45 candidates. The number today exceeds 230 which includes B.Tech., M.Tech. and Ph.D. The students are given a holistic approach and in depth learning in the various domains of the mechanical engineering eg, Thermal Engineering, Automobile Engineering, Refrigeration and Air Conditioning Systems, Materials or Manufacturing Science and also the recent interdisciplinary areas like Mechatronics, CFD, Robotics.

The students are exposed to courses with a practical based approach with the help of different labs along with the fully developed Central Workshop, Thermal Engineering Lab, Internal Combustion Engine Lab, Heat and Mass Transfer Lab, Refrigeration and Air Conditioning Lab, Fluid Mechanics Lab, Fluid Machinery Lab, Strength of Materials Lab, Theory of Machines Lab, Automobile Lab, Mechanical Vibrations Lab, CAD Lab, Production Engineering Lab, Mechatronics Lab, Metrology & Measurements Lab and Computer Integrated Manufacturing Systems Lab.

The students trained through our Mechanical Engineering programme have successfully gained technical positions in various corporate and industrial houses, within and outside the country.

SCOPE AND OBJECTIVES OF THE COURSE

Energy in our country is derived largely from the conventional sources of energy i.e. coal etc. which is imported globally to meet the energy demands of industries and population. The main agenda of Government of India is on energy conservation practices and increased clean energy utilization so that the fossil fuel can be preserved for long term usage and consequently reduced greenhouse gas emissions.

The advances in energy storage materials with good thermal characterization are identified by the academic researchers. They are promising option, which can contribute the Nation's Energy Economy as they enhance the performance of clean energy systems. There are many scopes on advanced materials and clean energy conversion technologies for future research work. Hence, a FDP is proposed to address key scientific challenges in the field of advanced material for energy storage and clean energy conversion technologies which are relevant to the development of cost effective clean energy conversion systems. The FDP is intended to expose the participants to the state of art concept on energy efficient and cost effective clean energy conversion technologies from the domain experts.

CONTENTS OF THE COURSE

The topics will include

- Clean Energy Conversion Technologies
- Advanced Thermodynamic Power Cycles
- Direct Energy Conversion Devices
- Hybrid Energy System
- Solar Thermoelectric System
- Hydrogen production, storage and utilization
- Modeling of materials for energy storage and conversion
- Application of nanotechnology in energy storage materials and conversion

- Research Issues on Solar Energy Conversion.

TENTATIVE PROGRAM SCHEDULE FOR FDP

DAY	9.30-11.00	11.00-11.30	11.30-1.00	1.00 - 2.30	2.30 to 4.00
21st September 2020	Inauguration and key note address Dr. E. Natarajan, Dean, CEG, Anna University Chennai	Refreshments	Prof Dinesh Pandya, Dean (Admin), IIT Jammu (Advances in direct energy conversion)	Lunch break	Dr. Sheelly Vadera, NIT Kurukshetra (Solar PV system-1)
22nd September 2020	Prof Ramesh C Mallik IISc Bengaluru (Thermoelectric Materials for Clean Energy Conversion)		Prof. T. Srinivas NIT Jalandar (Advanced Thermodynamic Power Cycles)		Prof Muruganadham, Saintgits College of Engineering, Kerala (Energy system Holistic Approach)
23rd September 2020	Dr. Yathesh Anand, SMVDU (Novel Energy Storage Materials)		Dr. P.G. Nikil NISE, Delhi (Solar Thermal Energy Conversion)		Dr. Sheelly Vadera, NIT Kuruskhetra (Solar PV system-2)
24th September 2020	Dr Dinesh Pandya IIT Jammu (Advances in thermoelectric)		Dr Sivareddy, RGM CET, Nandyal (Exergy analysis)		Dr.S. Shankar Kongu Engineering College (Energy Storage Materials Research Insight)
25th September 2020	Dr Anup Shukla IIT Jammu (Smart Energy System)		Dr. Sanjeev Anand, SMVDU (Energy and Environment)		Dr. Vineet V. Tyagi, SMVDU (Advances in PCM)

TARGET AUDIENCE

1. Faculty Members of Mechanical Engineering with specialization in (Thermal/ Design/ Energy), and related areas from AICTE Accredited Institutions.
2. Faculty members from Electrical/ Electronics/ Chemical Engineering, and other branches of Engineering and Applied Sciences are also encouraged to apply
3. Researchers and Students from Academic, Industry and R&D sectors.

RESOURCE PERSONS

Experts from IIT's, NIT's and other reputed intuitions and industries will handle the sessions.

HOW TO APPLY

The interested participants are requested to complete the online registration formalities <https://www.aicte-india.org/atal>

GENERAL INFORMATION

1. There is no registration fee for participants.
2. Top 05 scorers in the examination may also receive Book Prizes

COURSE COORDINATOR

Prof. M. Eswaramoorthy & Dr. Yatheshth Anand

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