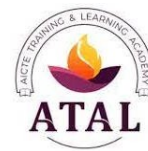




## **AICTE Training and Learning Academy (ATAL)**

### **Faculty Development Program**



On

## **“Clean Energy Technologies for Sustainable Development”**

**12<sup>th</sup> February 2024 to 17<sup>th</sup> February 2024**

### **PROGRAM OVERVIEW**

Faculty members are the corner stone of any educational institute as they are instrumental in shaping the future of students. It is very important that, from time to time the institutions organize faculty reorientation program. This serves two purposes; Firstly, the faculty re-embodies the vision of the institute and; Secondly, it helps to re-emphasize their role as educators as the beacon that imparts knowledge of great morals, ethics, and integrity of future generations.

### **PROGRAM OBJECTIVE**

The objective of the course is to provide the theoretical and practical knowledge of advanced approaches used in producing Renewable and Bioenergy. These are termed as green energy. “Green” word is used for the clean technology which are eco-friendly and safer to use. Its implementation will lead to solve the energy crisis, along with cleaner environment, and more cost-effective use of starting materials. It requires, in the majority of cases, the rethinking, redesign of many renewable, and bioprocesses that we currently think of as the industrial norm.

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 academic researchers identify the advances in energy storage materials with good thermal characterization. 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 clean energy technologies for future research work. Hence, a FDP is proposed with an objective to address key scientific challenges in the field of advanced Renewable Energy Technologies and Clean Energy 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 expert

## TOPICS TO BE COVERED

The present FDP is intended to cover basic elements of Renewable energy and Clean Energy Technologies such as:

- Sustainable Energy aspects
- Parameters to be considered for Energy Crisis
- Renewable and Non-renewable energy sources and their impact on energy scenario
- Clean Energy Conversion Technologies
- Direct Energy Conversion Devices
- Hybrid Energy System
- Hydrogen Production, Storage and Utilization
- Power Plants Marching towards Renewable for Sustainable Future
- Advances in direct energy conversion
- Research Issues on Solar Energy Conversion
- Solar PV system, Solar Thermal Energy Conversion
- Energy System Holistic Approach
- Novel Energy Storage Materials
- Energy, Environment and Advances in Phase Change Materials
- Climate Change and Sustainable Development

## PROGRAMME OUTCOME

After the completion of the FDP the participants would be able to access the impact of emerging Clean Energy Technologies and utilize the same in various applications. The participants would become capable of solving social issues relevant to energy, environment, and sustainable development.

## PARTICIPANTS

- AICTE approved Institution's Faculty members, Research scholars, PG scholars, and participants from Government, relevant Industry are eligible.
- **TA to Outstation Participants** @Rs. 2000/- (lump sum) per external participants payable only for those with  $\geq 90\%$  attendance.
- **Accommodation** to outstation participants on request shall be provided at the RGPV Guest House on chargeable basis (subject to availability).

## DETAILS

- The mode of the FDP is OFFLINE ( One Week)
- There is **No Registration Fee**.
- Maximum 50 participants.
- Selection of eligible participants on a first come first serve basis.
- Preference will be given to new participants.

## REGISTRATION

Participants can register for this program on AICTE-ATAL portal using following link:-

<https://atalacademy.aicte-india.org/signup>

**LAST DATE OF REGISTRATION: 05<sup>th</sup> February 2024**

**Continuous Comprehensive Assessment of candidates shall be carried out and certificate would be issued up on achieving at least 70% to receive over all in following aspects in the weightage mentioned below.**

- Attendance – minimum 80% attendance - (individual) - weightage 20%
- One assessment, - combination of MCQs/short answer type/reasoning based, etc. - (Individual) – weightage 10%
- 2 Page Article Summary/per Team - (Team & Individual) - weightage 30%
- Report/outcome of Industrial visit- (Team) at the last session –weightage 10%
- Reflective journal - (Individual) - at the last session – weightage 15%

## RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL



The Rajiv Gandhi Proudhyogiki Vishwavidyalaya, Bhopal has been established by the Government of Madhya Pradesh vide act no. 13 of 1998 of the Legislative Assembly. Over a sprawling Campus of about 247 acres, the Rajiv Gandhi Proudhyogiki Vishwavidyalaya is marching towards development into a centre of excellence in the arena of Technical Education, Research, and Innovations. Under its umbrella, there are 05 UTD's, 200 affiliated Engineering Colleges, 98 Pharmacy Colleges, 95 MCA Colleges and 04 Architecture Colleges imparting Graduate level instructions running around 17 under graduate-level courses, 85 Polytechnic institutions offering diploma courses in emerging and conventional disciplines.

## **SCHOOL OF ENERGY & ENVIRONMENT MANAGEMENT, UTD, RGPV**



**School of Energy & Environment Management (SoEEM)** is an autonomous university teaching department of Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal. SoEEM has been set up with a target of developing a talent pool of Post Graduates engrossed in research and engaged in cutting edge R&D, innovation for the major thrust in National Missions like Renewable Energy mission, National mission on Bio-fuels and Biodiesel, Green, Carbon Capture & Sequestration, Swachh Bharat Mission, etc. The Institute Labs, Energy Park has the latest Research Facilities installed for hands on experience on Solar, Wind, Biomass, Biodiesel, CCS, Hybrid Electric Vehicle etc. The Institute has National & International MoU's/Collaborations as well as department is committed to conduct International Conference every year. National & State Level Training Programs are conducted regularly viz.:

- AICTE, TEQIP Sponsored FDP's,
- AICTE-RGPV Joint Teachers Training Programs
- STTP's & Skill Development Workshops for Students
- Capacity Building Programs
- Solar Rooftop Training for Engineers by National Institute of Solar Energy(NISE), Delhi
- Training & Awareness Programs under Unnat Bharat Abhiyan in adopted villages for social, techno-economic development.

**Chief Patron**

**Prof. Sunil Kumar**  
Vice Chancellor, RGPV, Bhopal

**Patron(s)**

**Prof. R. S. Rajpoot**  
Registrar, RGPV, Bhopal

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**Organized By**

**School of Energy & Environment Management**  
(An Autonomous University Teaching Department)  
**Rajiv Gandhi Proudyogiki Vishwavidyalaya, M.P.**  
(State Technological University of Madhya Pradesh)  
[Accredited with Grade 'A' by NAAC]  
Contact No.: 0755-2678822, [www.rgpv.ac.in](http://www.rgpv.ac.in)

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### ATAL BASIC FDP - A Detailed Session Planning

Offline (9:30 AM – 5:30 PM)

Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
9:00 – 9:30 Inauguration					
9:30 – 12:00 Session 1 (Introduction & “What is Clean Energy Technologies?”)	9:30 – 12:00 Session 3 (Advances in Clean Energy Conversion Technologies)	9:30 – 12:00 Session 5 (Renewable Energy Technologies)	9:30 – 12:00 Session 7 (Solar Thermal Energy Conversion)	9:30 – 1:00 Industrial visit	9:30 – 12:00 Session 10 (Emerging Energy Technologies)
12:00 – 1:00 Article Discussion	12:00 – 1:00 Article Discussion	12:00 – 1:00 Article Discussion	12:00 – 1:00 Article Discussion		12:00 – 1:00 Reflection Journal
1:00 – 2:00 Lunch	1:00 – 2:00 Lunch	1:00 – 2:00 Lunch	1:00 – 2:00 Lunch	1:00 – 2:00 Lunch	1:00 – 2:00 Lunch
2:00 – 4:30 Session 2 (Role of Renewable Energy Technologies)	2:00 – 4:30 Session 4 (Solar PV Systems)	2:00 – 4:30 Session 6 (Energy System Holistic Approach)	2:00 – 4:30 Session 8 (Energy and Environment)	2:00 – 4:30 Session 9 (Clean Energy and Sustainable Development)	2:00 – 4:00 MCQ, Feedback & Interactions
4:30 – 5:30 Practical sessions/Labs	4:30 – 5:30 Practical sessions/Labs	4:30 – 5:30 Practical sessions/Labs	4:30 – 5:30 Practical sessions/Labs	4:30 – 5:30 Practical sessions/Labs	4:00 – 5:00 Valedictory Session