



Department of Physics

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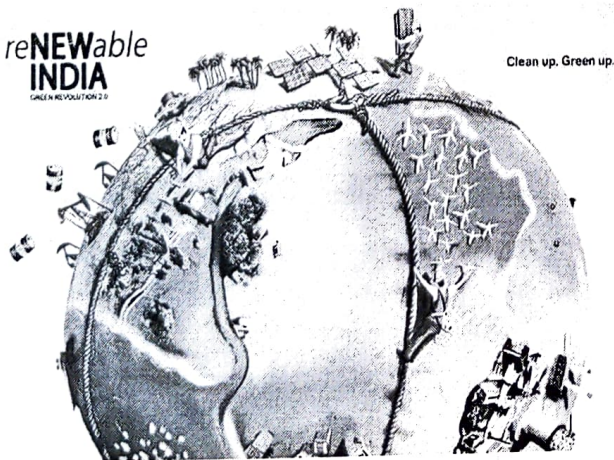
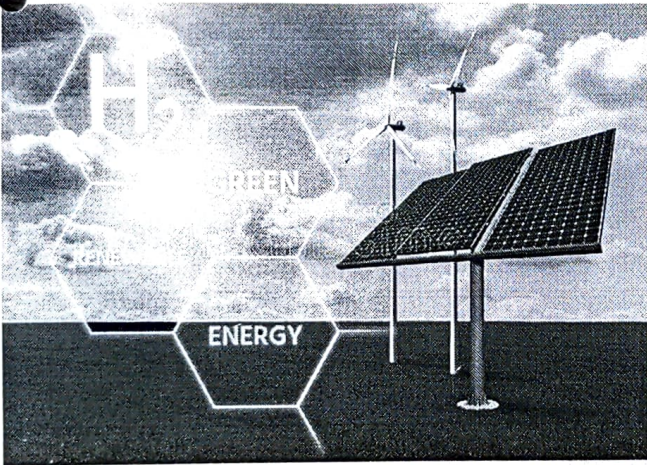
Department of Electronics and Communication Engineering

Integral University, Lucknow

Offers

Professional Development Program in

# Renewable Energy and its Future in India



Indian renewable energy sector is the fourth most attractive renewable energy market in the world. India was ranked fourth in wind power, fifth in solar power and fourth in renewable power installed capacity, as of 2020. Installed renewable power generation capacity has gained pace over the past few years. With the increased support of Government and improved economics, the sector has become attractive from investors perspective.

As India looks to meet its energy demand on its own, which is expected to reach 15,820 TWh by 2040, renewable energy is set to play an important role. The government is aiming to achieve 227 GW of renewable energy capacity (including 114 GW of solar capacity addition and 67 GW of wind power capacity) by 2022, more than its 175 GW target as per the Paris Agreement. The government plans to establish renewable energy capacity of 523 GW (including 73 GW from Hydro) by 2030.

*Sonvashis*  
Head  
Department of Physics  
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Lucknow



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## ***PDP Duration***

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Duration	Two weeks (14 days)
Commencement of Course	10.11.2021
End of Course	23.11.2021

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## ***Key Highlights***

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- Evaluation and assessment of Solar Radiation
  - Recent advances in Solar photovoltaic energy conversion
  - Challenges in Solar cooling and power generation
  - Wind power forecasting and energy conversion
  - Thermal management in Fuel Cells
  - Recent developments in Ocean thermal energy conversion
  - Advancements in Hydrogen fuelled vehicles
  - Green buildings for sustainable development
  - Research challenges in Solar Thermal Energy Storage
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## ***Learning Outcomes***

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- Make interpretation about the energy sources.
  - Comprehend the energy and energy types.
  - Make interpretation about the solar energy.
  - Explain the solar energy power plants.
  - Explain the solar energy collectors.
  - Make interpretation about the geothermal energy.
  - Explain the potential of geothermal energy.
  - Make interpretation about the wind energy.
  - Explain the production of electricity from wind energy.
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## ***Criteria for Course Completion***

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- Minimum 70% attendance.
- The course includes two quizzes which are mandatory for all enrolled participants. Each quiz shall be of 50 grades and a Minimum of 50% marks shall be required as eligibility criteria for completing the course and receiving the certificates.

*Srivastava*  
Head  
Department Of Physics  
Integral University  
Lucknow

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## Organizing Secretary

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- Dr. Syed Salman Ahmad Warsi, Department of Physics, Integral University, Lucknow.
  - Dr. Imran Ullah Khan, Department of ECE, Integral University, Lucknow
- Email: [salmanwarsi@iul.ac.in](mailto:salmanwarsi@iul.ac.in) , [iukhan@iul.ac.in](mailto:iukhan@iul.ac.in)

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## Faculty Coordinator

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- Dr. Afroj Ahmed Khan, Deptt. of Physics, IU, Lucknow
- Dr. Haroon, Deptt. of Physics, IU, Lucknow
- Dr. Anuradha Shukla, Deptt. of Physics, IU, Lucknow
- Ms. Tahira Khatoon, Deptt. of Physics, IU, Lucknow
- Dr. Piyush Charan, Deptt. of ECE, IU, Lucknow
- Mohd. Amir Ansari, Deptt. of ECE, IU, Lucknow
- Mrs. Nupur Mittal, Deptt. of ECE, IU, Lucknow
- Ms. Archana Yadav, Deptt. of ECE, IU, Lucknow

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## Registration Details

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The scheduled PDP will be conducted online using “Google Meet” Platform.

**Registration Link:**

<https://forms.gle/erWMVyPu2RxPSFvQ8>

**Join Whatsapp group using Link:**

<https://chat.whatsapp.com/EjalqB9vvPJDgAMTAQ1MCD>

**Registration Fee: NIL**

*E certificates will be provided to all successful participants. The Google Meet Link will be shared only with registered participants.*

*S. J. Vasth*  
Head  
Department Of Physics  
Integral University  
Lucknow





Department of Physics  
Integral University, Lucknow, Uttar Pradesh, India

Report on Professional Development Program on  
**Renewable Energy and its Future in India**

**Organised By**  
**Department of Physics and Department of Electronics and Communication Engineering**

- **Name of the Event:** Renewable Energy and Its Future in India
- **Session and Date of the Event:** 2020-21, 10<sup>th</sup> – 23<sup>rd</sup> November, 2021
- **Name of the department/institute who organized the event:** Department of Physics and Department of Electronics and Communication Engineering, Integral University
- **Number of the staff/faculty members involved:** 10
- **No of Participants:** 74
- **Co-ordinators of the Event:** Dr. Syed Salman Ahmad Warsi and Dr. Imranullah Khan

**Introduction:**

Renewable energy has been an important component of India's energy planning. The importance of renewable energy sources in the transition to a sustainable energy base was recognized in the early 1970s. Modern renewable energy is being used increasingly in four distinct markets: power generation, heating and cooling, transport, and rural/off-grid energy services. The Ministry of New and Renewable Energy (MNRE) in India has been facilitating the implementation of broad spectrum programs including harnessing renewable power, renewable energy for rural areas for lighting, cooking and motive power, use of renewable energy in urban, industrial and commercial applications and development of alternate fuels and applications. In addition, it supports research, design and development of new and renewable energy technologies, products and services. The approach for deployment of new and renewable energy systems focused on a mix of subsidy, fiscal incentives, preferential tariffs, market mechanism and affirmative action such as renewable purchase obligations by way of legislation and policies. Financial support has also been extended to research and development (R&D), information & publicity and other support programs. Renewable energy plays an important role in the long-term energy supply security, diversification of energy mix, energy access, environmental security and sustainability. Renewable energy is bound to play an increasing role in future energy systems.

To reduce the dependence on conventional energy resources and make people aware of the alternatively available renewable energy resources, Department of Physics and Department of Electronics and Communication Engineering, Integral University, organised a Professional Development Program (PDP) on Renewable Energy and it's Future in India from 10<sup>th</sup> November – 23<sup>rd</sup> November, 2021. The first week of the program was covered by the speakers invited by the Department of Physics. The detailed schedule is as under

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Integral University  
Lucknow  
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S. No.	Date and Time	Name of Speaker	Topic
1.	10/11/2021 2:00 PM – 3:00 PM	Dr. Usha Bajpai Prof. (Retd.), Physics Department, Lucknow University	Renewable Energy and its Future in India
2.	11/11/2021 3:30 PM – 4:30 PM	Ms. Iffat Zahra Rizvi Faculty of Science, Asia International School, Saudi Arabia	Renewable Energy: Scope in India
3.	12/11/2021 2:00 PM – 3:00 PM	Ms. Tarana Afreen Chandel Assistant Professor, Department of Electronics and Communication, Integral University	Harvesting Solar Energy
4.	13/11/2021 2:00 PM – 3:00 PM	Dr. Jyotsana Singh, Assistant Professor, Physics Department, Lucknow University	Renewable Energy for Sustainable Development
5.	15/11/2021 2:00 PM – 3:00 PM	Dr. Ram Gopal Singh, Associate Professor, Physics Department, SRM University	Solar Water Desalination – Solar Stills
6.	16/11/2021 2:00 PM – 3:00 PM	Quiz -1	

All the speakers shared their views on the basics of Renewable Energy and how it is going to play an important role in shaping the future of India in energy sector.

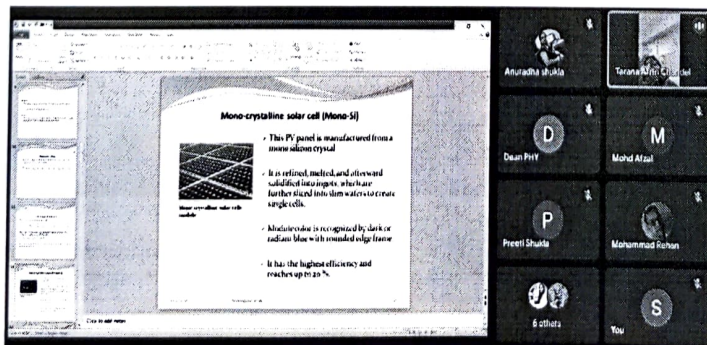
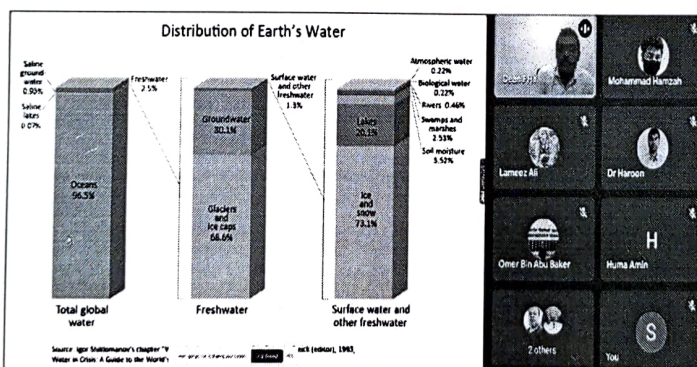
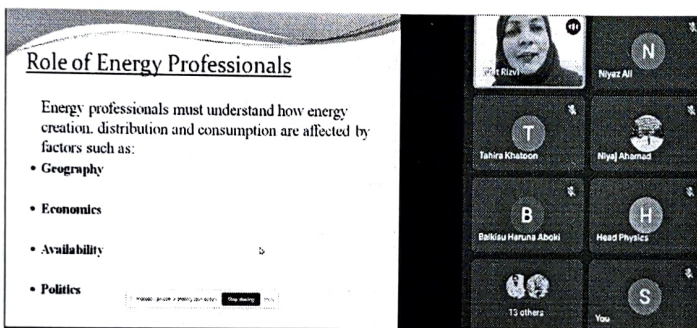
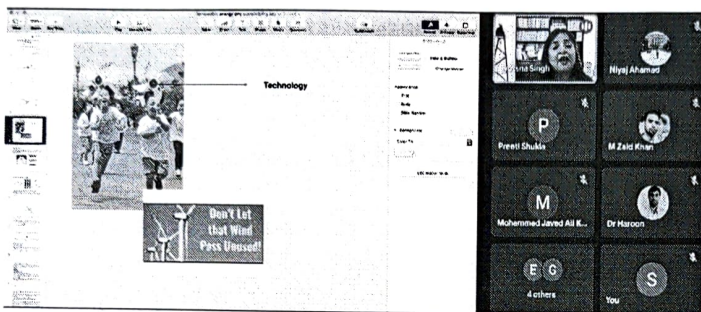
The second week was covered by the speakers of Department of Electronics and Communication.  
The detailed schedule is as under –

S. No.	Date and Time	Name of Speaker	Topic
1.	17/11/2021 11:00 AM – 12:00 PM	Dr. Piyush Charan Assistant Professor, Department of Electronics and Communication, Integral University	Hydrogen Cell Electric Vehicles: Fuel of the Future
2.	18/11/2021 3:30 PM – 4:30 PM	Dr. S. P. Singh Associate Professor and Head, EED, REC, Ambedkar Nagar	Fuzzy logic based MPPT techniques for photo- voltaic energy conversion system
3.	19/11/2021 2:00 PM – 3:00 PM	Mr. Zohaib Hasan Khan Assistant Professor, Department of Electronics and Communication, Integral University	Latest Trends in Non-Conventional Energy Resources
4.	20/11/2021 2:00 PM – 3:00 PM	Dr. V. S. Chandel Physics Department, REC, Ambedkar Nagar	Scopes and Challenges in Harvesting Solar Energy
5.	22/11/2021 2:00 PM – 3:00 PM	Dr. Mohammad Asim Assistant Professor, Department of EE, Integral University	Design and Comparative Study of MPPTPV System Operating under different Atmospheric Conditions
6.	23/11/2021 2:00 PM – 3:00 PM	Quiz -2	

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At the end of each module a Quiz was conducted and the certificate was distributed to all the successful participants.

### Glimpses of the Two Week Professional Development Program:



Dr. Syed Salman Ahmad Warsi  
Department of Physics  
Integral University

Dr. Imran Ullah Khan  
Department of ECE  
Integral University

Department Of Physics  
Integral University  
Lucknow  
*Sonvassava*





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Integral University, Lucknow, Uttar Pradesh, India

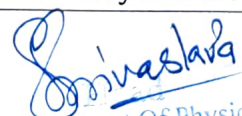
**Professional Development Program on  
Renewable Energy and its Future in India**

**List of Participants**

S. No.	Full Name	Designation	Institute/College Name
1.	Aatif Khan	Students	Integral university lucknow
2.	Abdul Aziz	Student	Integral University Lucknow
3.	Abdul Kalam	Student	Integral University Lucknow
4.	Abdul Waheed	Lab Instructor	Integral University Lucknow
5.	Abhishek Kumar Mishra	Student	Integral University Lucknow
6.	Adeeba Majeed	Student	Integral University
7.	Adil Khan	Student	Integral University
8.	Adnan Khan	Lecturer	Integral University
9.	Akash Gupta	Agriculture	Integral University
10.	Amir Rafay	Engineering	Integral University
11.	Anas Ahmad	BTech EE	Integral university
12.	Anjali Verma	Anjali Verma	Integral University
13.	Ankit Kumar	..	INTEGRAL UNIVERSITY LUCKNOW
14.	Ankit Kumar Maurya	Bsc(PME)	integral university lucknow
15.	Ashwani Kumar Mishra	Student	Integral University
16.	Atif Neyaz	Student	Integral University Lucknow Faculty of pharmacy
17.	Baby Naaz	Student	Integral University
18.	Balkisu Aboki Haruna	Student	IINR&R
19.	Dr. Afroj Ahmed Khan	Assistant Professor	Integral University, Lucknow
20.	Dr. Anuradha Shukla	Assistant Professor	Integral University, Lucknow
21.	Dr. Moiz Akhtar	Assistant Professor	Integral University, Lucknow
22.	Dr. Haroon	Assistant Professor	Integral University, Lucknow
23.	Dr. Piyush Charan	Assistant Professor	Integral University, Lucknow
24.	Dr. Preeti Shukla	Lecturer	Integral University
25.	Hari Krishna Dixit	Raibareli	Integral


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26.	Hiba Khan	Lucknow	Integral University
27.	Jazib Azeem	Student	INTEGRAL University Lucknow
28.	Karuna Shankar Rathour	Student	Integral University, Lucknow
29.	Lameez Ali	Student	Integral University, Lko
30.	Madhulika Charan	PG Research Scholar	Integral University
31.	Mantasha Mirza	Student	Integral University
32.	Masood Azhar	mechanical engineer	integral university
33.	Masoom Ali	B. Tech in Electrical Engineering	Integral University Lucknow
34.	Mazid Hussain	Bachelor Of Computer Application	Integral University, Lucknow
35.	Md Afzal Ali	B.pharma	Integral University Lucknow
36.	Md Miftahul Islam	Student	Integral University, Lucknow
37.	Md Zahid Umar	Student	Integral University, Lucknow
38.	Md Zaid Ansari	B.tech CTIS	Integral University
39.	Mohammad Aamir Qayyoom	Assistant Professor	Integral University Lucknow
40.	Mohammad Hamzah	Student	Integral university lucknow
41.	Mohammad Javed Ali Khan	Research Scholar	IIMS&R, Integral University, Lucknow
42.	Mohammad Rehan	Student	Integral University Lucknow
43.	Mohammad Shareef	Diploma Mechanical Engineering	Integral University Lucknow
44.	Mohammad Tabish	Student	Integral University
45.	Mohammad Zaid	Btech cse 1	Integral university Lucknow
46.	Mohd Afzal	Student	Integral University
47.	Mohd Arsh	Student	Integral University
48.	Mohd Azhan	Department of Computer Application	Integral University
49.	Mohd Haleem	Assistant Professor	Integral University
50.	Mohd Sharique	ME Engineer	Integral University
51.	Mohd Shoaib	Student	Integral University
52.	Mohd Suhaib Kidwai	Assistant professor	Integral University
53.	Mohd Tufel	D pharm 2nd	Integral University Lucknow

  
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 Integral University  
 Lucknow



		year	
54.	Muhammad Yusuf Siddiqui	Student	Integral University
55.	Nauman Raza	Student	Integral
56.	Neha Parveen	STUDENT	Integral University
57.	Omer Bin Abu Baker	Student	Integral University
58.	Parvez Ahmad	Student	Integral university lucknow
59.	Pooja Maurya	Microbiologist	Integral University, Lucknow
60.	Qazi Saeed Ahmad	AP	Integral University
61.	Rida Khan	Student	Integral university
62.	Riya Mehta	Computer	Integral university
63.	Rohit Kumar Gond	Student	Integral institute of nursing science and research
64.	Rudra Devraj	Student	Integral University
65.	Sadaf Siddique	M.Sc Biotechnology	Integral University
66.	Sanjar Ali	Student	Integral University
67.	Satyam	Diploma	Integral university Lucknow india
68.	Sayed Afaq Ahmed	Student	Integral University Lucknow
69.	Shahanshah	Student	Integral University
70.	Syed Faizan Abbas Rizvi	Student of B.Tech Civil Second Year	Integral University Lucknow
71.	Tabrez.Khan	Assistant Professor	Integral university lucknow
72.	Tahira Khatoon	Assistant Professor (level II)	Integral University
73.	Tanveer Fatima Rizvi	Student	Integral University
74.	Ujala Khan	Student	Integral university

  
 Head  
 Department Of Physics  
 Integral University  
 Lucknow

**INTEGRAL  
UNIVERSITY**

LUCKNOW (INDIA)



**INSPIRING EXCELLENCE**

Cert. No.: IU/2021/PDP/REIFI/

# Certificate OF COMPLETION

Department of Physics  
Integral University  
Lucknow

This is to certify that \_\_\_\_\_

*SAMPLE COPY*

has successfully completed Two-weeks Professional Development Programme on

## Renewable Energy and its Future in India

Organized by the Department of Physics, Faculty of Science in collaboration with the Department of Electronics and Communication Engineering, Faculty of Engineering, Integral University, Lucknow, from 10-11-2021 to 23-11-2021

*Prof. S. H. Saeed*  
**Prof. S. H. Saeed**  
Convenor, REIFI

*Seema Srivastava*  
**Dr. Seema Srivastava**  
Convenor, REIFI

*Dr. Imran Ullah Khan*  
**Dr. Imran Ullah Khan**  
Organising Secretary, REIFI

*Dr. Syed S. A. Warsi*  
**Dr. Syed S. A. Warsi**  
Organising Secretary, REIFI

Issue date: 28 November 2021