Bhoj Reddy Engineering College for Women

(Sponsored by Sangam Laxmibai Vidyapeet, Accredited by NAAC with A Grade, Approved by AICTE and Affiliated to JNTUH)
Vinaynagar, IS Sadan Crossroads, Saidabad, Hyderabad – 500 059, Telangana. www.brecw.ac.in

30 October 2024

Report on two-day workshop on "Design & Development of Solar Photovoltaic System"

EEE Department has organized a two-day workshop on "Design & Development of Solar Photovoltaic System" for II BTech EEE students on 24-25 October 2024. 52 (II EEE) students got registered. The workshop was scheduled from 09:30 to 16:30 Hrs.

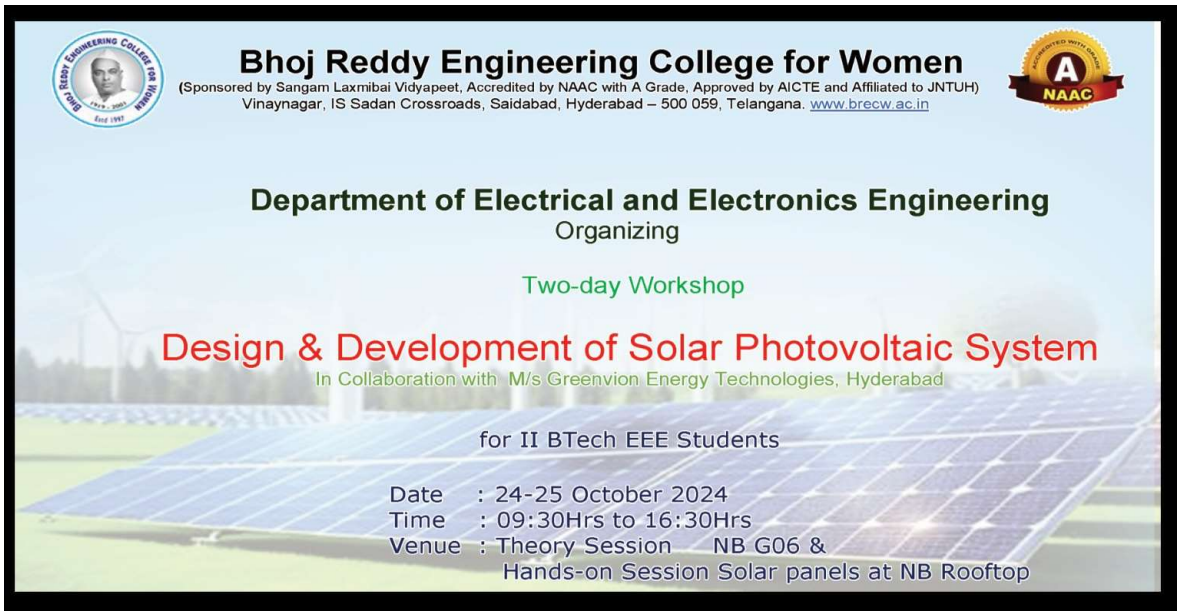

Figure 1 : Banner

Schedule :

S No	Topics	Time
	Day 1	
1	World Energy scenario National Energy Scenario . Types of energy's . Conventional . Non conventional sources of energy	11:15AM to 12:30PM
	LUNCH BREAK 12:30PM TO 1:30PM	
2	Introduction to solar energy . Solar Thermal . Solar Photo voltaic EnergySolar radiation . Sun & Earth moment . Sun tracking . Solar irradiation Industrial manufacturing process of solar cells & classification of solar cells . Efficiency of solar cells and modules . String and array's of SPV modules . Finding fill factor of SPV Modules	1:30PM to 3:00PM
3	Types of solar photovoltaic systems . Stand alone PV system . Hybrid PV system . Grid connected PV system . Off Grid PV system	3:00 PM to 4:30 PM

S No	Topics	Time
	Day 2	
1	Designing of solar photovoltaic systems with real time calc & case study	09:30 AM to 11:00AM
2	Practical's on measuring PV module specifications . Measuring Voc, Vmax . Measuring Isc, Imax . Finding efficiency of SPV module . Measuring incoming solar radiation (Pin)	11:00 AM to 12:30PM
	LUNCH BREAK 12:30PM TO 1:30PM	
	Factors effecting electricity generated by solar PV module . Effect of conversion efficiency . Change in the amount of input light (Pin) . Effect of change in PV module temperature . Change in PV module area (A) change in angle of light falling on PV module Factors on environmental impact on PV modules and solar power plant . Dust conditions on PV module & finding efficiency . Rain condition on PV module & finding efficiency . Different temperatures on PV module and finding efficiency Practical's on Series and Parallel connections of SPV modules . Dust conditions on PV module & finding efficiency . Rain condition on PV module & finding efficiency . Different temperatures on PV module and finding efficiency	1:30 PM to 4:30 PM

Figure 2 : Two day Shedule

The workshop was conducted by Greenvion Energy Technologies, Hyderabad.

The first day (24 October 2024) started with an inaugural function.

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Department of Electrical and Electronics Engineering

24 October 2024

Invitation

The EEE department is planning to host a Workshop on "Design & Development of Solar Photovoltaic System" for II B Tech EEE students during 24-25 October 2024.

The Schedule for Inaugural ceremony of the Workshop is as follows:

S. No	Time	Speaker
1	09:40 Hrs	Welcome Address by Ms Afrin, II EEE
2	09:45 Hrs	Address by HoD-EEE, Ms S Deepti
3	09:50 Hrs	Address by Vice-Principal, Mr G Dayakar Reddy
4	09:55 Hrs	Address by Principal, Dr J Madhavan
5	10:00 Hrs	Keynote address by Resource Person, Mr B Purushotham Chary
6	10:05 Hrs	Vote of Thanks by Ms Afrin, II EEE

So, we cordially invite you for the Workshop Inauguration Ceremony on 24 October 2024 (during 09:30 - 10:05 Hrs) at NB G06. Out of your hectic schedule, kindly make it convenient to enlighten our students.

Ms S Deepti
HoD-EEE

Figure 3 : Inaugural function shedule

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File No: BRECW/EEE/ Workshop/ AY 24-25/168 Date: 21/10/2024

Circular

All the II B Tech EEE students and staff are hereby informed that EEE Department is conducting a two-day workshop on "Design & Development of Solar Photovoltaic System" for II B Tech EEE students during 24-25 October 2024, scheduled from 09:30-16:30 Hrs.

This workshop will be conducted in collaboration with M/s Greenvion Energy Technologies, Hyderabad under the **Internal Quality Assurance Cell (IQAC).**

The schedule of the workshop is as follows:

S No	Class	Date and Time (Hrs)	Venue
1	2	3	4
1	II EEE	24 October 2024 09:30 – 16:30	II EEE Class Room, Room No: NB G06 (Inauguration &Theory Session)
		25 October 2024 09:30 – 16:30	Hands-on session on solar panels at North Block rooftop

All students must attend the workshop without fail.

Note:

1. All the II EEE students are hereby informed to register for the workshop by paying an amount of **Rs. 350/-** towards registration fee by 22 October 2024 (16:30 Hrs). The registration fee must be paid through a scanner which is available with Junior Assistant in EEE department.
2. The faculty who are handling II EEE should mark the attendance as per the timetable on these respective dates.
3. All the EEE teaching and non-teaching faculty who do not have class work are requested to attend the Inaugural session of this workshop on 24 October 2024 at NB G06 at 09:30 am.

Principal

To

All HoDs and HoFs for circulation among the students and staff members

Copy to

1. Chief Operating Officer
2. Director-HR & Academics
3. Vice Principal
4. IQAC Coordinator
5. Seminar & Workshop Coordinator
6. Maintenance Officer, BRECW
7. Notice Boards
8. I/c Security
9. File
10. I/c Seminar Hall 1, 2 NB

Figure 4 : Circular

Figure 5 : Inaugural function photos

Solar PV systems have become increasingly popular in recent years due to their ability to generate clean energy and reduce reliance on fossil fuels. However, designing an efficient and effective solar PV system requires careful planning and attention to detail.

In the forenoon session of workshop, students learnt the designing a solar PV system, which is to determine the energy requirements of the building or facility where the system will be installed. This involves calculating the energy consumption of the building, including the lighting, heating, and cooling systems, as well as any other electrical appliances.

Afternoon session of the workshop was dealt with the basics of the Present Energy Scenario in India Types of PV systems, Power and energy calculation. The afternoon session was on Components of solar Photo-Voltaic system, Load analysis, Component selection, battery safety, Voltage drops, controllers, commissioning procedures. Then learnt to select the components for the solar PV system. This includes selecting the solar panels, inverters, batteries (if necessary), and other components required the system to function. The selection of components should be based on the energy requirements of the building, the site analysis, and the available budget. System Design involves determining the number of panels, the configuration of the panels, and the sizing of the other components to ensure that the system can meet the energy requirements. The design should also take into account any shading or other factors that may affect the performance of the system.

In the second day (25 October 2024) of the workshop, Forenoon session started with financial analysis and how to install a solar Photo-Voltaic system. The afternoon session was a practical session. This involves mounting the panels, connecting the components, and testing the system to ensure that it is working properly. Installation should be carried out by qualified professionals to ensure that the system is installed safely and correctly. At last students learnt that regular maintenance is essential to ensure that the system continues to function properly over time. This may include regular inspections, cleaning the panels, and replacing components as necessary. For this, students are divided into ten groups and practicals are conducted on solar panels. The students analyzed a solar photo-voltaic module and calculated the performance of solar photo-voltaic module.


GPS Map Camera
Bhoj Reddy Engineering College for Women, Hyderabad, Telangana, India
Rooftop North Block, 17-1-209/B, Saroornagar, Vinayak Nagar Colony, Saidabad, Hyderabad, Telangana 500059, India
Lat 17.353453° Long 78.507684°
25/10/24 03:07 PM GMT +05:30
Google

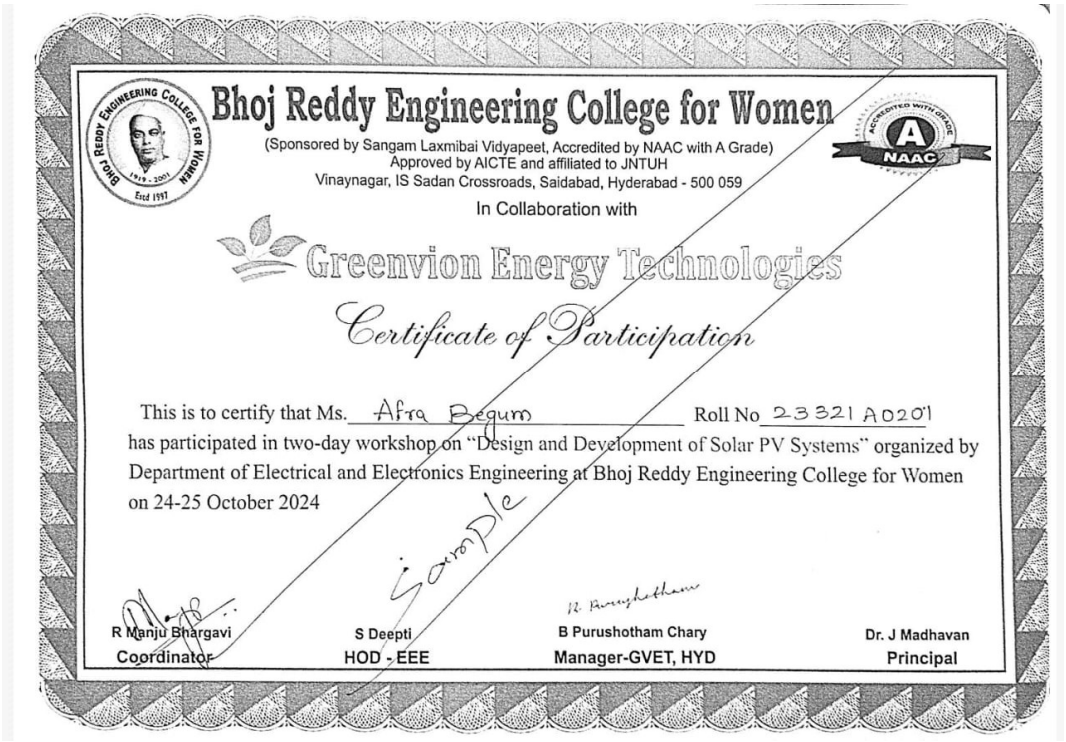

Bhoj Reddy Engineering College for Women
Department of Electrical and Electronics Engineering
Design & Development of Solar Photovoltaic System
GPS Map Camera
BRECW
Roof top Solar Workshop, Bhoj Reddy Engineering College for Women ,Vinay Nagar Colony, Saroor Nagar West, Saidabad, Hyderabad, Saroornagar, Telangana 500059, India
Lat 17.354778°
Long 78.508025°
25/10/24 03:20 PM GMT +05:30
Google

Figure 7 : Hands on sessions photos

This information will be used to determine the size of the solar PV system needed to meet the energy demand. Then they learnt to conduct a site analysis to determine the optimal location for the solar PV system. This includes assessing factors such as the orientation and angle of the roof or ground, shading from trees or other structures, and the climate of the region. The analysis will help determine the size and type of solar panels needed for the system, as well as the best location for the panels to maximize energy production.

Figure 8 : Vadilictory Cermony photo

All the participants were given the participation certificates in the valedictory function at the end of second day.



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In Collaboration with

Greenvion Energy Technologies

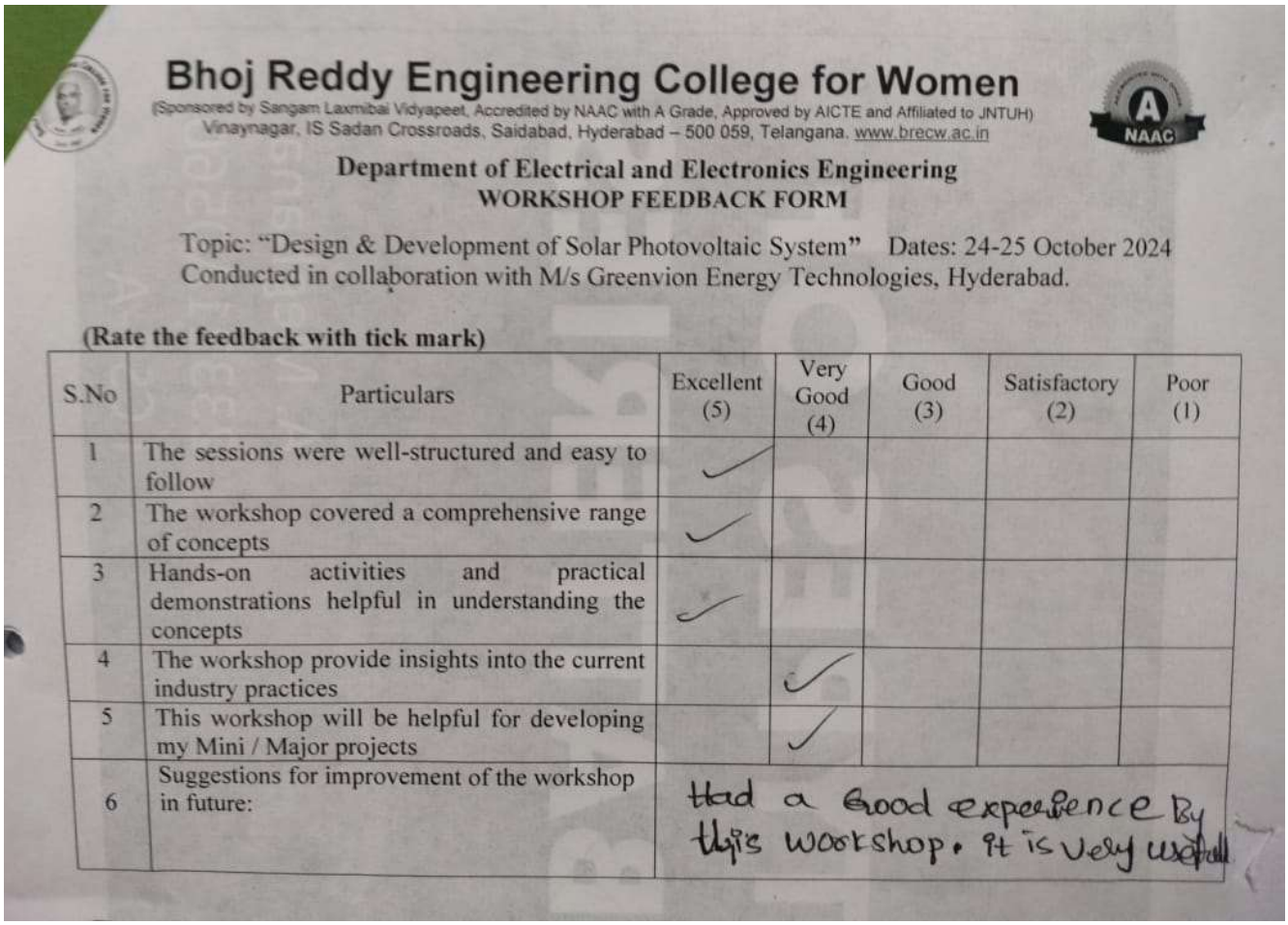
Certificate of Participation

This is to certify that Ms. Afra Begum Roll No 23321A0201
has participated in two-day workshop on "Design and Development of Solar PV Systems" organized by Department of Electrical and Electronics Engineering at Bhoj Reddy Engineering College for Women on 24-25 October 2024

Sample

R Manju Bhargavi	S Deepti	B Purushotham Chary	Dr. J Madhavan
Coordinator	HOD - EEE	Manager-GVET, HYD	Principal

Figure 9 : Certificate sample



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Department of Electrical and Electronics Engineering
WORKSHOP FEEDBACK FORM

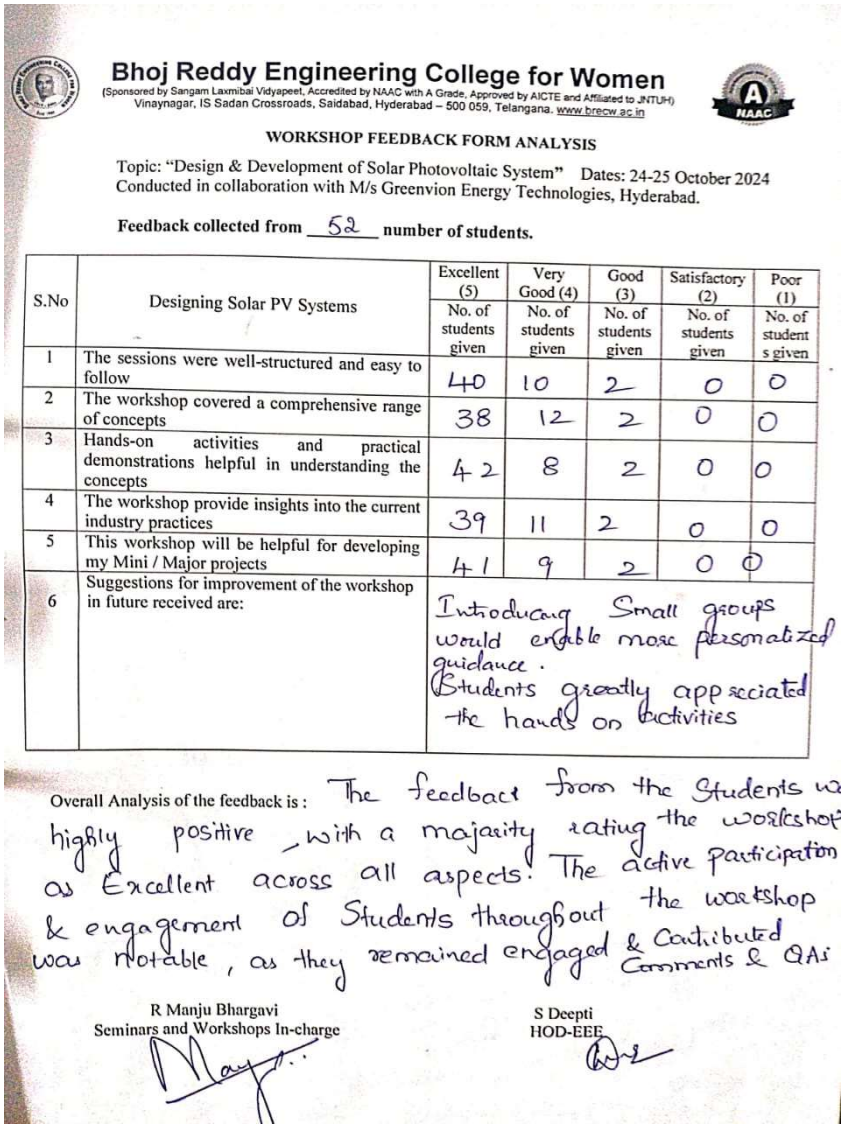
Topic: "Design & Development of Solar Photovoltaic System" Dates: 24-25 October 2024
Conducted in collaboration with M/s Greenvion Energy Technologies, Hyderabad.

(Rate the feedback with tick mark)

S.No	Particulars	Excellent (5)	Very Good (4)	Good (3)	Satisfactory (2)	Poor (1)
1	The sessions were well-structured and easy to follow	✓				
2	The workshop covered a comprehensive range of concepts	✓				
3	Hands-on activities and practical demonstrations helpful in understanding the concepts	✓				
4	The workshop provide insights into the current industry practices		✓			
5	This workshop will be helpful for developing my Mini / Major projects		✓			
6	Suggestions for improvement of the workshop in future:	Had a Good experience By this Workshop. It is very useful				

Figure 10 : Sample feedback form

The Feedback from the students was collected. Total 52 students provided the feedback. Overall feedback of the workshop is Excellent and active participation of students during the workshop was notable, and students were engaged throughout the session. Student's thoughtful questions and insightful comments added a lot of value to the overall discussion. We could tell that students have a good grasp of the subject matter as the workshop was informative and enlightening. In future, we can encourage students to continue attending such events and to keep learning and growing in their field of interest.



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WORKSHOP FEEDBACK FORM ANALYSIS

Topic: "Design & Development of Solar Photovoltaic System" Dates: 24-25 October 2024
Conducted in collaboration with M/s Greenvion Energy Technologies, Hyderabad.

Feedback collected from 52 number of students.

S.No	Designing Solar PV Systems	Excellent (5) No. of students given	Very Good (4) No. of students given	Good (3) No. of students given	Satisfactory (2) No. of students given	Poor (1) No. of students given
1	The sessions were well-structured and easy to follow	40	10	2	0	0
2	The workshop covered a comprehensive range of concepts	38	12	2	0	0
3	Hands-on activities and practical demonstrations helpful in understanding the concepts	42	8	2	0	0
4	The workshop provide insights into the current industry practices	39	11	2	0	0
5	This workshop will be helpful for developing my Mini / Major projects	41	9	2	0	0
6	Suggestions for improvement of the workshop in future received are:	Introducing Small groups would enable more personalized guidance. Students greatly appreciated the hands on activities				

Overall Analysis of the feedback is : The feedback from the Students was highly positive, with a majority rating the workshop as Excellent across all aspects. The active participation & engagement of Students throughout the workshop was notable, as they remained engaged & Contributed Comments & QAs

R Manju Bhargavi
Seminars and Workshops In-charge

S Deepti
HOD-EEE

Figure 11 : Feedback Analysis form

R Manju Bhargavi, Seminars and Workshops In-charge faculty expressed her sincere gratitude for allowing EEE department with and the opportunity to conduct a workshop at BRECW. She appreciated the support that management gave and said it was informative session. Once again, she said thank you for allowing them to contribute to the learning and development of their students and the session was concluded by the vote of thanks and certificates distribution.

R Manju Bhargavi
Seminars and Workshops In-charge

S Deepti
HOD-EEE