



**Visakha Govt. Degree College for Women**  
(NAAC REACCREDITED B GRADE INSTITUTION)  
Old Jail Road, Visakhapatnam- 530 020, Andhra Pradesh



**DEPARTMENT OF PHYSICS**  
**Certificate Course on**

# INTRODUCTION TO SOLAR CELLS

## Objectives :-

- Introduction to solar energy.
- I-V curve and power from a solar cell.
- Production of silicon solar cells.
- Working of solar cell.
- Modelling solar cell.
- Thin film technology.

**Course Coordinator**

**Smt. R<sup>e</sup>Manjula**

Lecturer in Physics

**Faculty**

**Smt. R. Manjula, Lectr in Physics**

**Smt. M. Ramya, Lectr in Physics**

**Course Director**

**Dr. S. Shobha Rani**

Principal

# Visakha Govt. Degree College for Women:: Visakhapatnam

Department of Physics

Certificate Course

## INTRODUCTION TO SOLAR CELLS

Duration : 30 hours

Hour	Course Content
01	Why do we need renewable energy?
02	Why do we need solar energy? Sun light at earth
03	Solar cell history
04	Invention of modern solar cell
05	Space applications
06	Power from a solar cell
07	The I-V curve
08	Measuring power using an electric load
09	Light sources
10	Modelling solar cell ... resistances

STUDENTS ENROLLED

CLASS : I<sup>st</sup> YEAR BSc (MPC & MPCs) (2018-19)

S.No.	NAME OF THE STUDENT	SECTION
01	A. HEMA LATHA	MPC
02	A. JHANSI KUMAR	MPC
03	B. DIVYA	MPC
04	B. NAVYA SREE	MPC
05	Ch. LAVANYA	MPC
06	O. PRASANNA KUMAR	MPC
07	D. SWATHI	MPC
08	D. VASANTHA KUMAR	MPC
09	K. VAJRAM	MPC
10	K. ANURADHA	MPC
11	K. LALITHA	MPC
12	K. LEELAVATHI	MPC
13	K. MANI	MPC
14	M. APOORVA	MPC
15	M. SANDHYA	MPC
16	M. SRIDEVI	MPC
17	M. YAMUNA	MPC
18	G. KUMAR	MPC
19	P. SAJ PRASANNA	MPC
20	S. LAVANYA	MPC
21	V. SOWJANYA	MPC
22	V. RAVALIKA	MPC
23	V. HEMALATHA	MPC
24	B. BUJJI	MPCs
25	B. MOONIKA	MPCs
26	B. SANTHOSH	MPCs
28	Ch. GOWTHAMI	MPCs
29	D. GAYATHRI	MPCs
30	G. MALATHI	MPCs
31	G. LAVANYA	MPCs
32	D. TEJESWARI	MPCs
33	J. MOONIKA	MPCs
34	K. KOMALI	MPCs
35	K. PAVANI	MPCs
36	K. SRAVANI	MPCs
37	M. PALLAVI	MPCs
38	M. HEMA	MPCs
39	P. NANDINI	MPCs
40	R. SUPRIYA	MPCs

*Signature*  
M. Rupa

S.No	NAME OF THE STUDENT	21.01.19	22.01.19	23.01.19	24.01.19	25.01.19	28.01.19	29.01.19	30.01.19	31.01.19	01.02.19	02.02.19	04.02.19	05.02.19	06.02.19	07.02.19	08.2.19	11.2.19	12.2.19	13.2.19	14.2.19	15.02.19	16.2.19	18.2.19	19.2.19	20.2.19	21.2.19	22.2.19	23.2.19	25.2.19	26.2.19	MARKS	
01	A. Hema latha	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	A	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	42
02	A. JHANSI kumari	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	A	A	P	P	P	41
03	B. Divya	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	A	P	P	P	A	A	P	P	P	P	P	P	P	P	P	44
04	B. Navya Sree	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	43
05	Ch. Lavanya	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	A	P	38
06	O. Prananna Kumari	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	42
07	D. Swathi	P	P	A	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	46
08	D. Varanatha Kumari	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	44
09	K. Vajram	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	43
10	K. Anuradha	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	48
11	K. Lalitha	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	47
12	K. Leelavathi	P	P	P	A	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	A	P	P	P	P	P	P	40
13	K. Mani	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	A	P	P	39
14	M. Apoorva	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	A	P	P	P	P	P	47
15	M. Sandhya	P	P	P	P	P	A	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	47
16	M. Sridevi	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	A	P	P	P	P	P	P	48
17	M. Yamuna	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	42
18	O. Kumari	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	A	42
19	P. Sai Prananna	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	41
20	S. Lavanya	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	A	P	P	P	P	P	P	37
21	V. Sowjanja	P	A	P	P	P	P	P	P	A	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	39

Visakha Govt. Degree College for Women::Visakhapatnam

Department of Physics

Introduction to solar cells

Time: 2hrs

Max.Marks:50

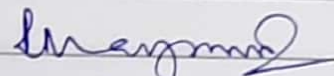
Answer any 5 questions

5x10=50

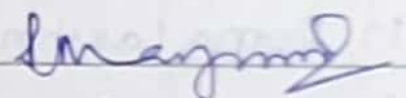
1. Why do we need renewable energy? Discuss the various conventional sources of energy.
2. How do you measure power from a solar cell and draw the IV curve.
3. Explain the working of solar cell.
4. What is a P-n junction diode? Explain its Characteristics.
5. What are polymer solar cells? How do they work?
6. Explain the working of a silicon solar cell.

Department of Physics, Visakha Govt. Degree college (w) conducted a certificate course on "Introduction to Solar Cells" from the academic year 2018-19 for 1st BSc students. The duration of the course is 30 hours. The main objectives of the course is built around three core areas namely "where solar cells be applied and to optimize their usefulness and to generate power from solar cell."

The course has been conducted from 21.01.19 to 26.02.19. 40 students from both MPC and MPCs sections have participated in this course. After completion of the course, students acquired the basic knowledge about solar cells and its applications in daily life.

  
H. Deepa

No.	Name of the student	Section
29	R. Jyotw	MPCS
30	Sadhiya Tabakum	MPCS
31	S. Hema latha	MPCS
32	S. Devi	MPCS
33	S. Venkata Jyotw	MPCS
34	Shaik <del>Ra</del> Parveen	MPCS
35	A. Sireetha.	MPCS
36	V. Greetwika	MPCS
37	V. Thanuja	MPCS
38	V. Bhargavi	MPCS
39	V. RS. Lakshmi	MPCS
40	Y. Lavanya	MPCS

  
M. Rupa

SNO	Name of the student	02.12.19	03.12.19	04.12.19	05.12.19	06.12.19	07.12.19	09.12.19	10.12.19	11.12.19	12.12.19	13.12.19	16.12.19	17.12.19	18.12.19	19.12.19	20.12.19	21.12.19	23.12.19	24.12.19	25.12.19	26.12.19	30.12.19	31.12.19	01.01.20	03.01.20	04.01.20	05.01.20	07.01.20	08.01.20	09.01.20	10.01.20	MARKS
01	A. Poojpa	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	47
02	B. Siva Jyothi	P	P	P	P	A	P	P	P	P	P	P	P	P	P	A	A	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	43
03	B. Anjali	P	P	P	P	P	P	A	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	48
04	D. Leela	P	P	P	P	P	P	A	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	44
05	G. Moonika	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	43
06	G. Uma	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	A	A	P	P	P	P	P	P	P	P	P	P	P	P	P	42
07	G. Yamuna	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	48
08	G. Jagadeenwasi	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	47
09	K. Bhargavi	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	A	A	P	P	P	P	P	P	P	P	P	P	44
10	K. Thanuja	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	49
11	M. Kumari	A	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	41
12	M. Indu	P	P	P	P	P	P	P	P	A	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	43
13	M. Hema latha	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	38
14	M. Swathi	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	37
15	M. Rama Lakshmi	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	44
16	P. Aamani	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	A	A	P	P	P	P	P	P	P	P	P	P	P	P	48
17	R. Sai Zanthia Sree	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	46
18	V. Geetha Bhavani	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	44
19	V. Vani	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	A	P	P	P	P	P	P	P	P	P	42
20	V. Romya Sri	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	A	P	P	P	P	P	P	P	P	P	41
21	B. Meena	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	40
22	B. Venuka	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	45
23	G. Kavya	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	46
24	G. Rajenwasi	P	P	P	P	A	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	44
25	K. Haritha	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	43
26	K. Balasri	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	A	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	41
27	K. Baby Priyanka	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	A	P	P	P	P	43
28	P. Yamini	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	42
29	R. Jyothi	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	39





Visakha Govt. Degree College for Women::Visakhapatnam

Department of Physics

Introduction to solar cells

Time: 2hrs

Max.Marks:50

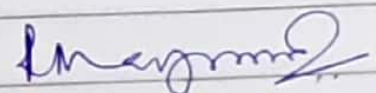
Answer any 5 questions

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1. Why do we need renewable energy? Discuss the various conventional sources of energy.
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The course has been conducted from 02-12-19 to 10-01-20. 40 students from both MPC and MPCs sections have participated in this course. After completion of the course, students acquired the basic knowledge about solar cells and IIT applications in daily life.

  
T. R. R. R.