CHAPTER 1
INTRODUCTION

1.1 BACKGROUND

The world demand for electric energy is constantly increasing, and conventional energy resources are diminishing and are even threatened to be depleted. Moreover, their prices are rising. For these reasons, the need for alternative energy sources has become indispensable, and solar energy has proved to be a very promising alternative because of its availability and pollution-free nature.

The use of efficient photovoltaic solar cells has emerged as an important solution in energy conservation and demand side management. Owing to their initial high costs, they have not been an attractive alternative for users who are able to buy cheaper electrical energy from the utility grid. However, they have been extensively used in pumping and air conditioning in remote and isolated areas where utility power is not available or too expensive to transport. Although solar cell prices have decreased considerably during the last years due to new developments in the film technology and the manufacturing process, PV arrays are still considered rather not that expensive compared with the utility fossil fuel generated electricity prices.

Solar panels produce direct currents (DC), and to connect these panels to the electricity grid or use them in other industrial applications, we should have an AC output at a certain required voltage level and frequency. The conversion from DC to AC is essentially accomplished by means of a DC-AC inverter, which is the major component in the system. Yet, the output of the solar panels is not continuously constant and is related to the instantaneous sunlight intensity and ambient temperature.

1.2 OBJECTIVES

The objective of this solar inverter project is to design and implement a cutting-edge, high-efficiency system that converts solar energy into reliable, clean electricity. By leveraging advanced technologies and innovative solutions, the project aims to maximize energy output, minimize losses, and ensure seamless integration with both residential and commercial power grids. Focused on sustainability and cost-effectiveness, this project seeks to empower users with an eco-friendly, future-ready energy solution that not only reduces reliance on fossil fuels but also contributes to a greener, more sustainable planet.

1.3 RELEVANCE

Solar Energy as the Future

Solar energy offers two key advantages over fossil fuels: it is renewable and environmentally friendly. Unlike fossil fuels, which pollute the atmosphere and contribute to global warming, solar power is non-polluting and sustainable.

Pollution-Free Energy

Solar energy does not introduce harmful pollutants into the environment. While fossil fuel plants require vast land to extract and process fuel, solar installations only need the land they occupy. If every home and business used solar power, no additional land would need to be destroyed for energy production.

Reduction in Greenhouse Gases

As global warming concerns grow, many countries are aiming to reduce greenhouse gas emissions. Solar energy, especially through photovoltaic (PV) systems, plays a key role. PV panels generate electricity without emissions, and over their lifetime, they produce more energy than is used in their manufacturing. They can also be installed on unused spaces like rooftops.

Energy Production in Remote Locations

Solar power is ideal for remote areas without access to the electricity grid. In such cases, solar installations offer the most economical solution. While many countries like Germany and the USA lead in PV power generation, solar energy's decentralized nature is crucial for minimizing environmental disruption. In summary, solar energy is a sustainable, eco-friendly solution that can meet our energy needs with minimal environmental impact.

1.4 REPORT ORGANIZATION

Report is organised into chapters each chapter deals with their own specifications. The chapters are

Chapter 1 deals with introduction, background, relevance and report organisation.

Chapter 2 deals with review of literature.

Chapter 3 deals with design considerations.

Chapter 4 deals with circuit diagram of project.

Chapter 5 deals with implementation and their results.

Chapter 6 deals with Advantages and Applications.

Chapter 7 deals with Conclusion and Future scope.

This is the Report organisation of project and report is concluded with references to our literature survey.

CHAPTER 2

REVIEW OF LITERATURE

Paper [1] focuses on how to generate electricity using a 12V 15W solar panel that charges a 12V 4Amp battery. The stored energy is then converted into 220V AC power using a 150W semi sine wave inverter. This system provides a sustainable energy solution, especially in areas lacking reliable power sources. The solar panel absorbs sunlight, converting it into DC electricity, which is regulated by a charge controller and stored in the battery. The inverter then converts the DC power into AC electricity for appliances. While the system works effectively, the output of solar panels can fluctuate due to weather conditions, which can affect appliances requiring stable voltage. Low-power devices can still be used without issues, and with appropriate regulators, the system is versatile. In conclusion, the solar inverter project is a practical, cost-effective, and sustainable solution for generating and using solar power, providing reliable electricity to rural and tribal areas while reducing reliance on fossil fuels.[1]

Paper [2] focuses on the design and implementation of a 1.5kVA 12V DC, 230V AC solar-powered mobile inverter. The principle of operation involves converting 12V DC from a 200Ah deep-cycle battery into 230V AC using integrated circuits (SG3524) and semiconductors at a frequency of 50Hz, across a transformer. The battery is charged using solar panels via a charge controller. A microcontroller-based monitoring system (ATMEGA16) with an LCD and LEDs displays the inverter's status. The system includes overload protection, shutting down when the load exceeds 1500VA or battery voltage drops below 12V DC. A smaller transformer controls relay switching between inverting and charging modes, with battery cut-off at 13.6V and surge protection at 250V. The system was successfully installed, tested, and delivers the required output, offering a cost-effective, noiseless, and low-maintenance alternative to public power supply and generators. [2]

Paper [3] introduces a standardized procedure for the design of large-scale institutional grid-connected solar PV systems. The procedure was validated by designing a grid-connected solar PV system with battery back-up, which is gaining popularity due to its efficiency. With solar customers in many regions receiving low compensation for electricity sold back to the grid, battery back-up systems offer a practical solution by storing excess energy during the day for use at night. This approach is particularly useful for off-grid or rural areas where access to reliable electricity is limited. The proposed solar PV system utilizes a new concept incorporating a relay inverter, which enhances its ability to manage energy flow. The system is designed to integrate PV power into the grid efficiently, helping to balance fluctuations in solar energy production. This is achieved by managing the power exchanged between the grid and the battery, ensuring stable energy delivery while also reducing peak load demands. The developed system optimizes energy storage and distribution, making it a viable and efficient solution for both urban and rural areas.[3]

Paper [4] gives information how the solar-powered inverter system operates by converting the DC electricity generated by solar panels into AC power, which can be used for household appliances. The process begins with 200W, 12V solar panels wired in parallel, capturing sunlight and converting it into electrical energy. A 12V 20A charge controller regulates the current from the solar panels to the battery, ensuring that the battery is not overcharged. The 100AH/12V battery stores the energy generated by the panels for later use. An oscillator circuit powered by the 12V battery uses an SG3524 integrated circuit and NPN transistor drivers to generate a stable 50Hz frequency, which is essential for converting DC to AC. In the switching stage, IRF740 MOSFETs are employed to switch the current on and off at 50Hz, generating an alternating current in the primary winding of the inverter transformer. The transformer steps up the 12V DC to 220V AC, which is then supplied to household appliances via an output socket. This system provides an efficient, sustainable power source for residential use, utilizing solar energy to power everyday electrical devices. [4]

Paper [5] focuses on how the solar panel converts sunlight into DC power, which is fed to the inverter to generate AC power. An ESP32 microcontroller monitors system parameters like voltage and current, displayed on a 16x2 LCD, while a relay controls the power supply to connected devices. The circuit includes a 12V battery connected to a diode, LED, and IC 4047, operating in a stable multivibrator mode. The IC generates a 50% duty cycle output frequency to control IRF540 MOSFETs, which switch current through the transformer to produce AC. The transformer steps up the voltage to supply power to devices. This smart solar inverter optimizes energy use, reduces waste, and promotes sustainability. It allows real-time monitoring via an IoT system and the Blynk app, balancing the grid and preventing power surges. Key parameters like Battery Voltage (BV), Load Voltage (LV), Load Current (LC), and Load Percentage (LP) are shown on the LCD, contributing to efficient and cost-effective energy management.[5]

CHAPTER 3

DESIGN CONSIDERATIONS

Few sections of the solar inverter are:

1. The solar panel

2. Rechargeable battery

3. The inverter.

3.1 SOLAR PANEL

A solar panel (or photovoltaic panel) is an assembly of solar cells that generates electricity through the photovoltaic effect. These cells, typically made of crystalline silicon or thin-film materials like cadmium telluride, uses light energy (photons) from the sun to produce electricity through photovoltaic effect. Solar panels are connected to each other in series or parallel to achieve the desired output voltage and current.

The most common solar panels are rigid, but semi-flexible panels are also available. Electrical connections are typically made with conductive materials such as silver or copper or other non-magnetic conductive transition metals. The panels are designed to protect the cells from mechanical damage and moisture, and installers focus on providing good ventilation to reduce overheating, which can lower efficiency.

Fig. 3.1 Solar Panel

The efficiency of commercial solar panels typically ranges around 21%, though high-efficiency cells (using materials like gallium arsenide) can achieve higher performance, especially with concentrator designs that focus light onto smaller cells. The energy density of a solar panel is usually greater than 13 W/ft^2 (140 W/m^2), indicating the amount of power it can generate per unit area.

3.2 RECHARGABLE BATTERY

The battery used in this project is a rechargeable sealed lead sulphate battery rating 6V 4.5AH. This type of battery is excellent for rechargeable purpose.

A rechargeable battery or storage battery is a group of one or more electrochemical cells. They are known as secondary cells because their electrochemical reactions are electrically reversible. Rechargeable batteries come in many different shapes and sizes, ranging anything from a button cell to megawatt systems connected to stabilize an electrical distribution network. Several different combinations of chemicals are commonly used, including lead–acid, nickel cadmium (NiCd), nickel metal hydride (NiMH), lithium ion (Li-ion), and lithium-ion polymer (Li-ion polymer). Rechargeable batteries have lower total cost of use and environmental impact than disposable batteries. Some rechargeable battery types are available in the same sizes as disposable types.

Rechargeable batteries have higher initial cost but can be recharged very cheaply and used many times.

Fig. 3.2 Rechargeable Battery

3.3 INVERTER

Since normal dc can't be used in most applications due to which there is a requirement that somehow the dc is changed to ac for this the inverter is used which converts the dc to ac of suitable range for use in household appliances.

In this project the dc from the sealed rechargeable battery of 12V is fed to the inverter which then converts it to ac of 12 V this makes it possible to recharge normal mobile chargers. An inverter is an electrical device that converts direct current (DC) to alternating current (AC), the converted AC can be at any required voltage and frequency with the use of appropriate transformers, switching, and control circuits.

Solid-state inverters have no moving parts and are used in a wide range of applications, from small switching power supplies in computers, to large electric utility high-voltage direct current applications that transport bulk power. Inverters are commonly used to supply AC power from

DC sources such as solar panels or batteries. The inverter performs the opposite function of a rectifier.

3.3.1 Modelling of Solar Inverter

we are modelling a 12 V inverter system, now we will install battery of 12V, 4.5Ah. We want a current of 100 mA

Now the required No of Solar Panels

P = VI

P = 12 V x 100 mA

P = 1.2 Watts

This is the required watts for solar panel (only for battery charging, and then battery will supply power to the load), Now

1.2 W/6V = 2 Solar panels

Or 1.2 W/12V = 1 Solar panels

3.3.2 Components Description of Components used in inverter circuit

1N4007

1N4007 belongs to the silicon family of1N400X series. It is a general-purpose rectifying diode that serves its purpose of converting alternating current signals (AC) to direct current signals (DC) in electronic products. IN4007 is reverse biased. Reverse biasing will restrict the flow of current and can damage the device if voltage applied is greater than reverse breakdown voltage. During reverse biasing a leakage current flow through a diode which is negligible compared to forward current.

Fig. 3.3 1N4007 Diode

Table 3.1 Maximum Ratings and Electrical Characteristics (@Ta=+25°C)

Characteristics	1N4007 values	**units**
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	10000	V
RMS Reverse Voltage	7000	V
Average Rectified Output Current (Note 1) @ Ta =+75°C |	1.0	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sinewave Superimposed on Rated Load	30	A
Forward Voltage @ If = 1.0A	1.0	V
Peak Reverse Current @Ta = +25°C at Rated DC Blocking Voltage @ Ta =+100°c	5.0 50	µA
Typical Junction Capacitance (Note 2)	8	pF
Typical Thermal Resistance Junction to Ambient	100	K/W
Maximum DC Blocking Voltage Temperature	+150	°C
Operating and Storage Temperature Range	-65 to +150	°C

SG3524

The SG3524 incorporates on a single monolithic chip all the functions required for the construction of regulating power supplies inverters or switching regulators. They can also be used as the control element for high power-output applications. The SG3524 family was designed for switching regulators of either polarity, trans former-coupled dc-to-dc converters, transformer less voltage doublers and polarity converter applications employing fixed-frequency, pulse-width modulation techniques. The dual alternating outputs allow either single-ended or push-pull applications. Each device includes an on-ship reference, error amplifier, programmable oscillator, pulse-steering flip flop, two uncommitted output transistors, a high-gain comparator, and current limiting and shut-down circuitry.

SG3524 chip offers improved performance and requires fewer external parts while building switching power supplies. SG3524 incorporates all the necessary functions to design a switching regulator and inverter. This IC can also be used as a control element for high-power applications.

Some of the application of SG3524 IC are:

1.Transformer-coupled DC-DC converters

2.Voltage doublers without using transformer

3.Polarity-converter applications

4.Pulse-width modulation (PWM) techniques

Table 3.2 Absolute Maximum Ratings of SG3524 IC

Symbol	Parameter	Value	Unit
Vin	Supply Voltage	40	V
IC	Reference Output Current	100	Ma
IR	Reference Output Current	50	Ma
IT	Current Through CT Terminal	-5	Ma
Ptot	Total Power Dissipation at T amb = 70°C	1000	Mw
Tstg	Storage Temperature Range	-65 to 150	°C
Top	Operating Ambient Temperature Range	0 to 70	

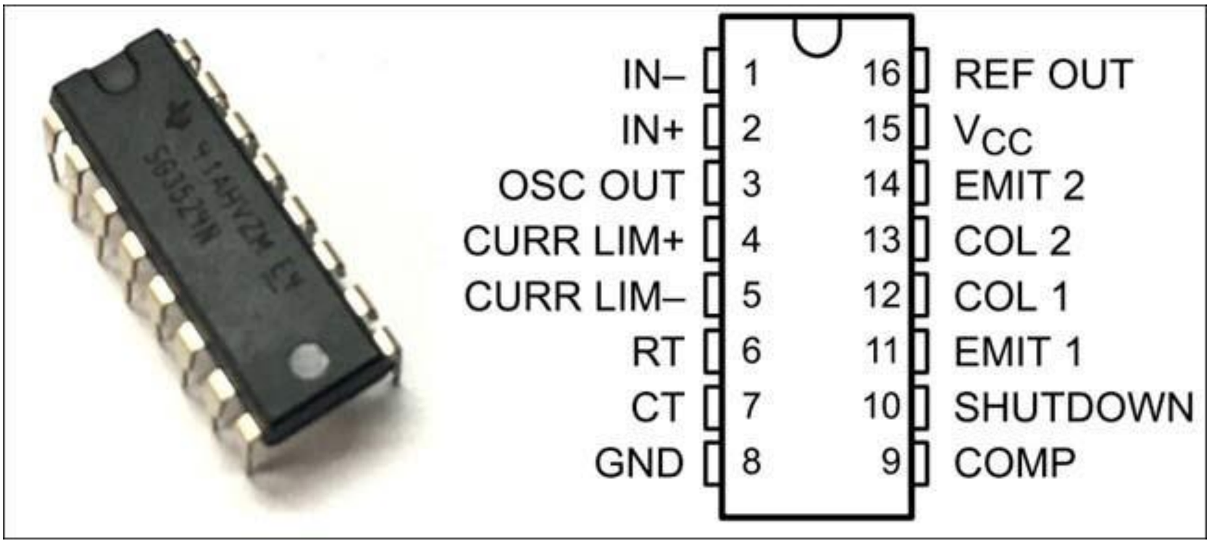

Fig. 3.4 SG3524 IC Pinout

Table 3.3 SG3524 IC Pins description

S. No	Pin	Description
1.	IN-	Inverting input to error amplifier
2.	IN+	NON-Inverting input to error amplifier
3.	OSC OUT	Oscillator output
4.	CUR LIM+	Positive current limiting amplifier input
5.	CURR LIM+	Negative current limiting amplifier input
6.	RT	Resistor terminal used to set oscillator frequency
7.	CT	Capacitor terminal used to set the oscillator frequency
8.	GND	Ground pin
9.	COMP	Error amplifier compensation pin
10.	SHUTDOWN	Device shutdown
11.	EMIT 1	Emitter Pin A
12.	COL1	Collector Pin A
13.	COL 2	Collector Pin B
14.	EMIT 2	Emitter Pin B
15.	VCC	Positive Supply
16.	REF OUT	Reference regulator output

Capacitor

A capacitor consists of two conductive plates, each hosting an opposite charge, separated by a dielectric or insulator. The dielectric material, such as ceramic, polyester, air, or paper, prevents the plates from touching each other. Capacitors are commonly used to store analogue signals and digital data. Some capacitors, known as variable capacitors, are used in telecommunications to adjust frequency and tuning.

A capacitor is Ideal for storing a" electrical charge, though it cannot generate electrons. It Is measured in voltage, which differs between the two plates. As a capacitor discharges, one plate fills with a steady flow of current, while the other plate releases current. An analogy for the flow of voltage in a capacitor is lightning, where the cloud represents one plate, and the ground represents the other.

Fig. 3.5 Capacitor

Resistors

A resistor is an electrical component that limits or regulates the flow of electrical current in an electronic circuit. Resistors can also be used to provide a specific voltage for an active device such as a transistor. In a direct-current (DC) circuit, the current through a resistor is inversely proportional to its resistance, and directly proportional to the voltage across it, according to Ohm’s Law. This rule also applies in alternating-current (AC) circuits if the resistor does not contain inductance or capacitance.

Resistors can be fabricated in different ways, with common types being carbon-composition resistors, which are made by mixing fine granulated carbon with clay and hardening the mixture. The resistance of these resistors depends on the ratio of carbon to clay. Another type is the wire-wound resistor, made by winding Nichrome or similar wire on an insulating form, and it can handle higher currents than a carbon-composition resistor of the same size. However, wire-wound resistors can act as inductors in AC circuits, potentially affecting performance.

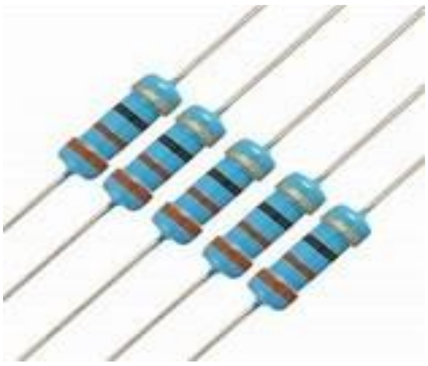

Fig. 3.6 Resistor

TIP41 Transistor

The TIP41 is a versatile NPN bipolar junction transistor (BJT) widely used for switching and amplification in electronic circuits. Packaged in the durable TO-220 casing, it is capable of handling medium to high-power applications, supporting a maximum collector current of 6A and power dissipation of up to 65W. With a range of collector-emitter voltage ratings—from 40V (TIP41) to 100V (TIP41C)—it offers flexibility for various circuit requirements. Operating as an electronic switch or amplifier, the TIP41 uses a small base current to control the flow of current between the collector and emitter, making it reliable for both power control and signal processing tasks. Its current gain (h_{FE}) of 15–75 ensures consistent performance in applications like motor drivers, LED arrays, audio amplifiers, and voltage regulators. Known for its affordability, availability, and efficiency, the TIP41 is a go-to choice for many designers. To achieve optimal performance, it is essential to include a base resistor for current limiting and use a heat sink to manage thermal dissipation in high-power scenarios.

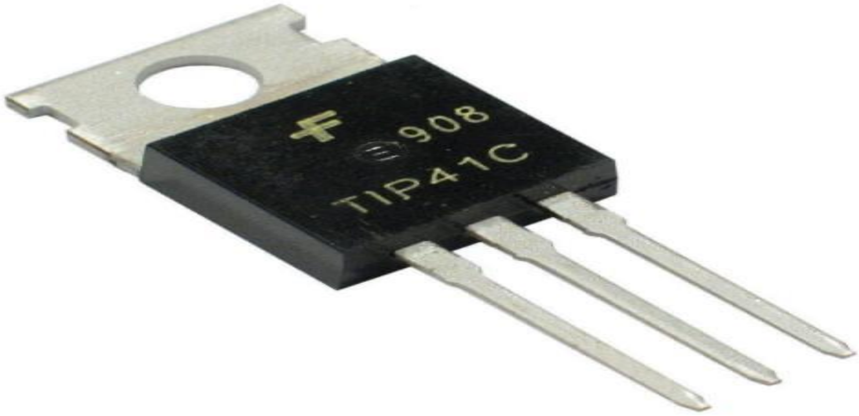

Fig. 3.7 TIP41 Transitor

CHAPTER 4

CIRCUIT DIAGRAM

BlockDiagram

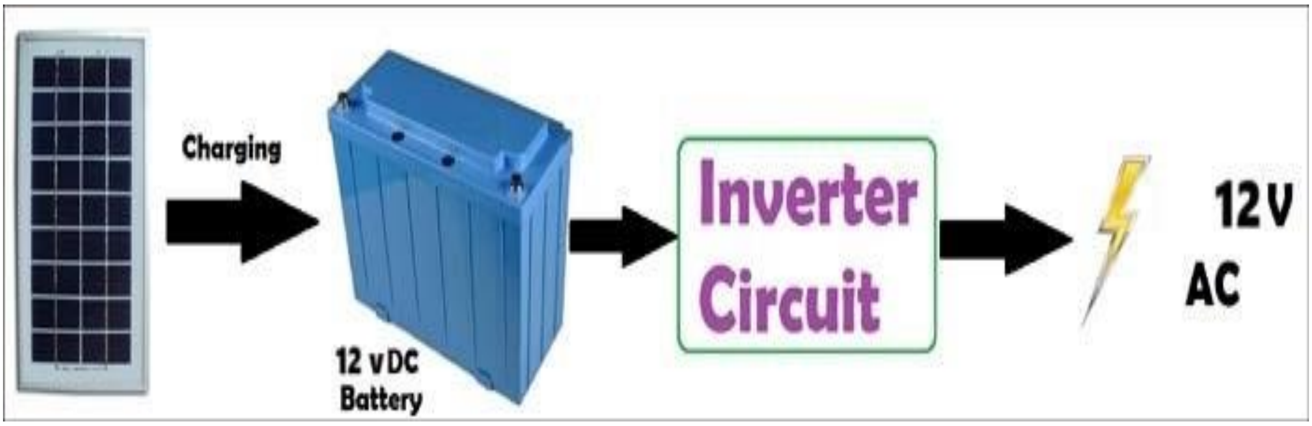

Fig. 4.1 Block Diagram of Solar Inverter

Circuit Diagram

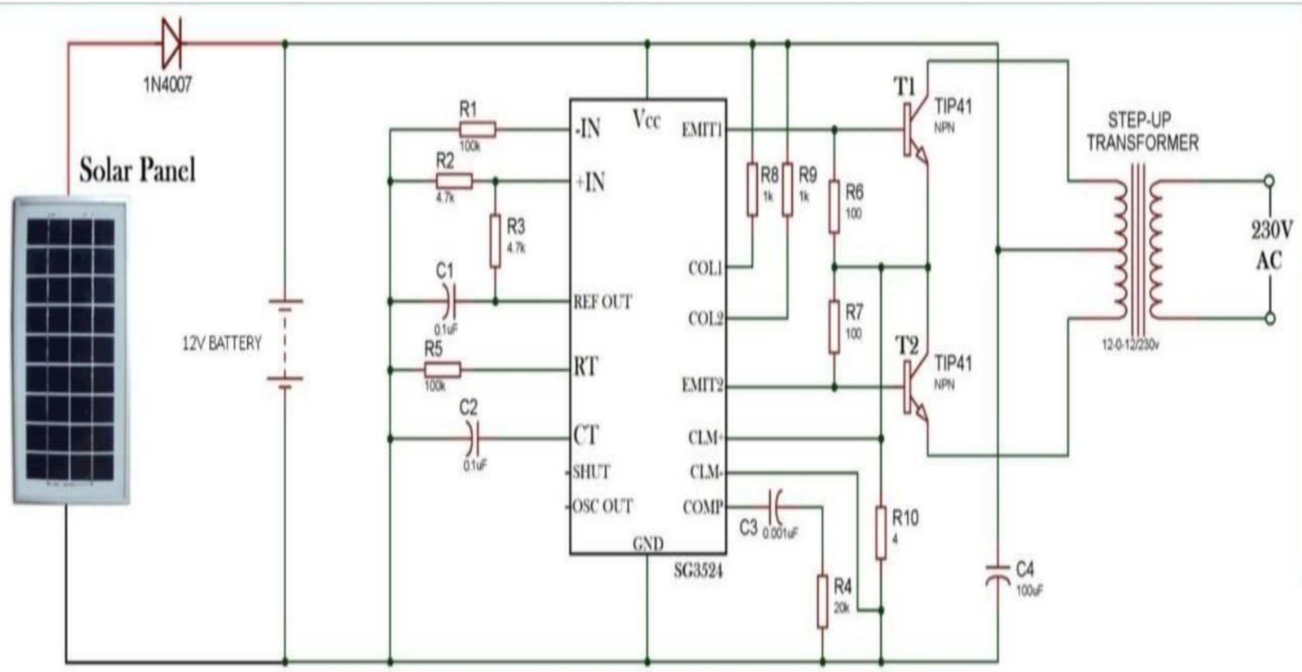

Fig. 4.2 Circuit Diagram of Solar Inverter

Table 4.1 Components used in Circuit

S.N0.	Component Name

1.	12 V, 10 W Solar Panel
2.	12 V, 4.5 Ah Rechargeable Battery
3.	SG3524 IC
4.	TIP41 High Power npn Transistor
5.	Resistors (100K, 4.7K, 100, 1K, 20K)
6.	Capacitors (0.1uF, 0.01uF, 100uF)
7.	1N4007 Diode
8.	Bread Board
9.	Connecting Wires

Working of Solar Inverter Circuit

Solar energy is converted into electrical energy by using photovoltaic solar panels and then generated DC (Direct Current) is stored in batteries which is further converted by into Alternating Current (AC) by solar inverters. Then this AC current is fed into commercial electrical grid or can be directly supplied to the household appliances.

Initially, the solar panel is charging the rechargeable battery and then the battery is supplying voltage to the inverter circuit. The circuit consists of IC SG3524 which operates at a fixed frequency, and this frequency is determined by 6^{th} and 7^{th} pin of the IC which is RT and CT. RT set up a charging current for CT, so a linear ramp voltage exists at CT, which is further fed to the inbuilt comparator. Since the frequency of alternating current in India. We are keeping frequency of PWM as 50 by taking CT = 0.1 microfarads and RT = 100k

frequency = 1/(2*RT*CT)

= 1/(2*100K*0.1*10^-6)

= 50 Hz

For providing reference voltage to the circuit SG3524 has an inbuilt 5V regulator. A voltage divider network is created by using two 4.7k ohm resistors which feed the reference voltage to the inbuilt error amplifier. Then the amplified output voltage of error amplifier is compared with the linear voltage ramp at CT by the comparator, hence producing a PWM (Pulse Width Modulation) pulse.

This PWM is further fed to the output pass transistors through the pulse steering flip flop. This pulse steering flip flop is synchronously switched by the inbuilt oscillator output. This oscillator pulse also acts as a blanking pulse to ensure that both the transistors are never turned ON simultaneously during the transition times. The value of CT controls the duration of the blanking pulse.

Now, as you can see in the circuit diagram pins 11 and 14 are connected to the TIP41 transistors for driving the step-up transformer. When the output signal at pin 14 is HIGH, transistor T1 turns ON and current flows from the source to the ground via the upper half of the transformer. And, when output signal at pin 11 is HIGH, transistor T2 turns ON and current flows from the source to the ground via the lower half of the transformer. Therefore, we receive Alternating Current at the output terminals.

CHAPTER 5

IMPLEMENTATION AND RESULTS

5.1 Software Implementation

Proteus 8 Professional is used for software implementation of solar inverter.

Proteus 8 Professional is a powerful and versatile simulation and design software used primarily for embedded systems and electronic circuit design. It offers a comprehensive suite of tools for schematic capture, PCB layout, and simulation, allowing engineers to design, test, and prototype electronic circuits in a virtual environment. One of its standout features is the ability to simulate microcontroller-based designs, including visualizing code execution in real-time, which is invaluable for debugging and development. Proteus 8 Professional supports a wide range of components, from basic passive elements to complex microcontrollers, and allows for seamless integration with other tools for hardware development. This makes it a popular choice for professionals and hobbyists working on embedded systems, automation, and electronic projects.

Since SG3524 IC is not available in Proteus 8 professional. So, TL494 IC instead is used. All the components are present in Proteus Library. Except Solar Panel, which is imported from Snap EDA.

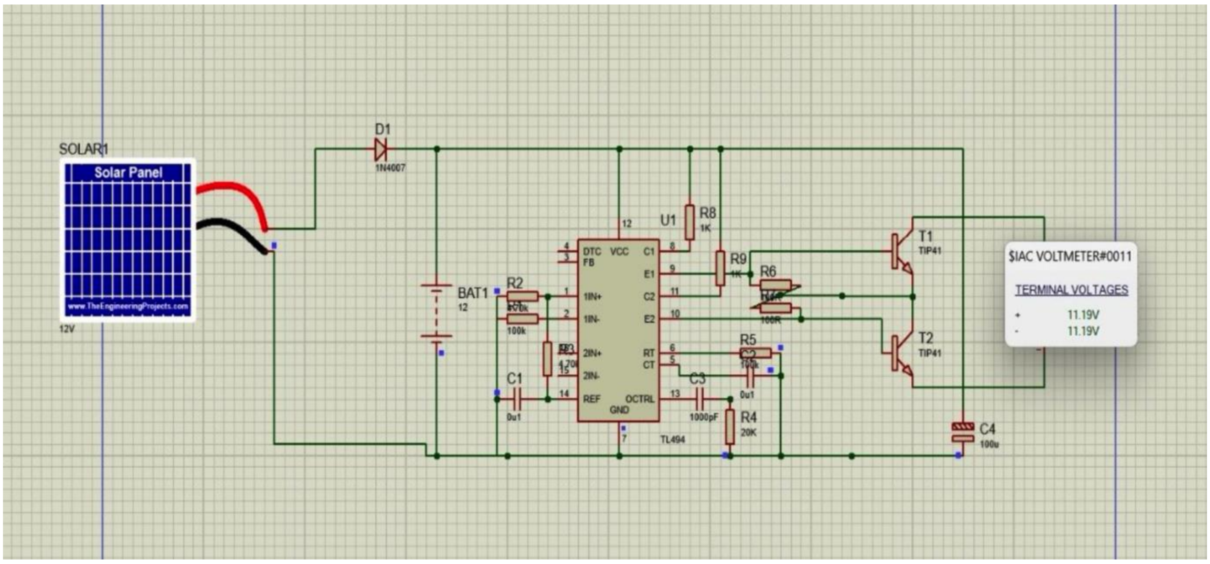

Fig. 5.1 Circuit Diagram in Proteus8

12V Solar Panel, 12V rechargeable battery, TL494 IC, TIP41 NPN Transistor, Resistors (100K, 4.7K, 100, 1K, 20K), Capacitors (0.1uF, 0.01uF, 100uF),1N4007 are used. Solar panel charges the battery which indeed provides power to the inverter circuit. In inverter circuit TL494 is the main component. R1 (100k) is used as part of a voltage divider to set the reference voltage for the comparator IC, helping generate the control signal for the power transistors (TIP41).R2 (4.7k) and R3 (4.7k) is used to form a low-pass filter with C1 to smooth out the voltage ripple from the rectifier, providing a stable DC voltage to the comparator. R4 (20k) Sets the current limit for the power transistors, controlling the maximum current the inverter can deliver. R6 (100) and R7 (100)are used to Bias the base of the power transistors to ensure proper operation with the control signal from the comparator.R8 (1k) and R9 (1k) are Pull-up resistors for the comparator's output, ensuring a clean and reliable signal.C1 (0.1µF)is used for decoupling or filtering purposes. C4 (100µF) is used to filters the DC output voltage of the inverter, smoothing out ripple or fluctuations.

We got 11.19 V AC voltage as output when we used 12volt solar panel to charge the 12volt rechargeable battery.

5.2 HARDWARE IMPLEMENTATION

Few sections of the solar inverter are:

1. The solar panel

2. Rechargeable battery

3. The inverter.

Solar Inverter

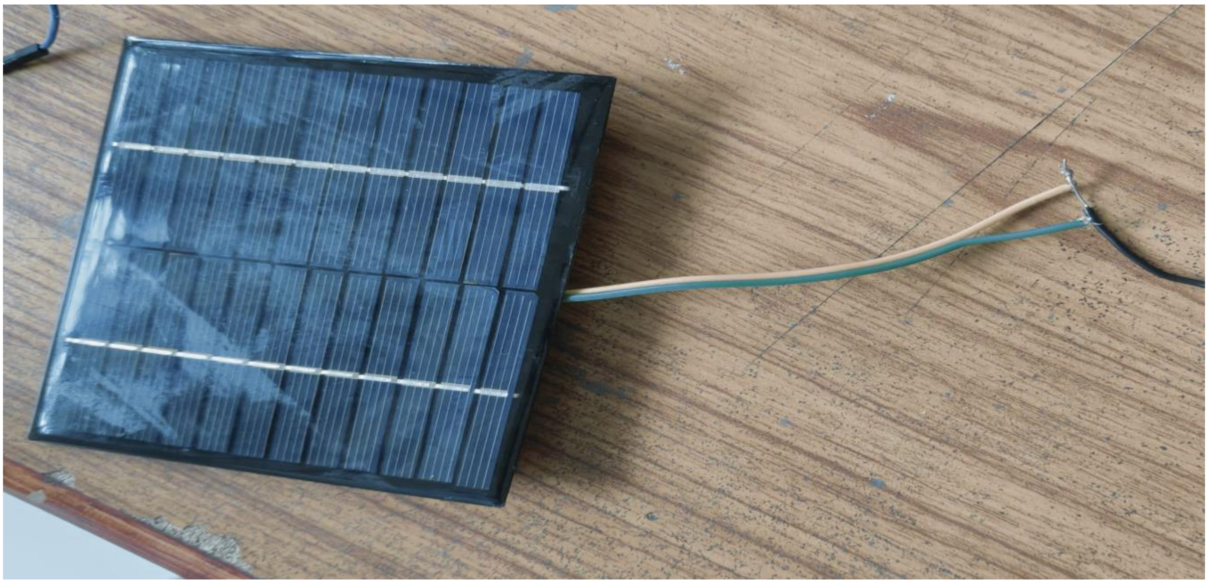

Fig. 5.2 Solar Panel section

Rechargeable Battery

Fig. 5.3 Rechargeable Battery section

Inverter

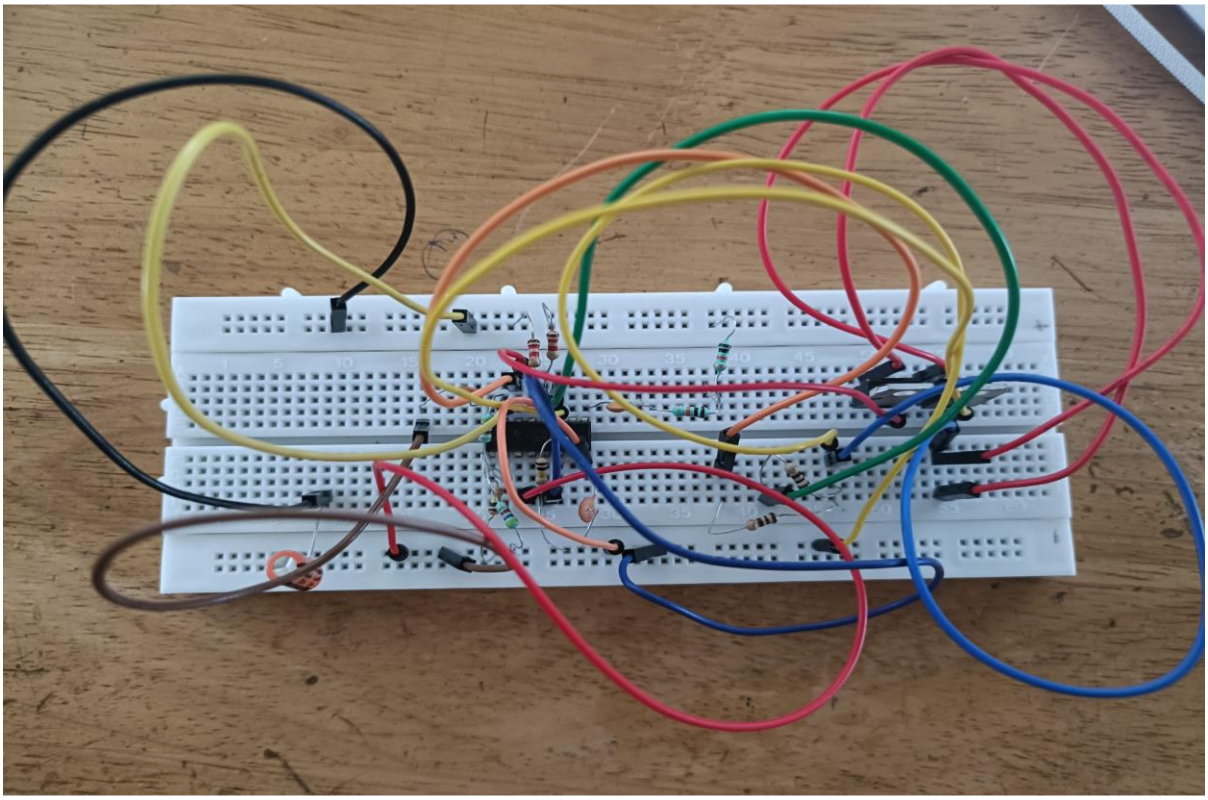

Fig.5.4 Inverter Section

Hardware Implementation

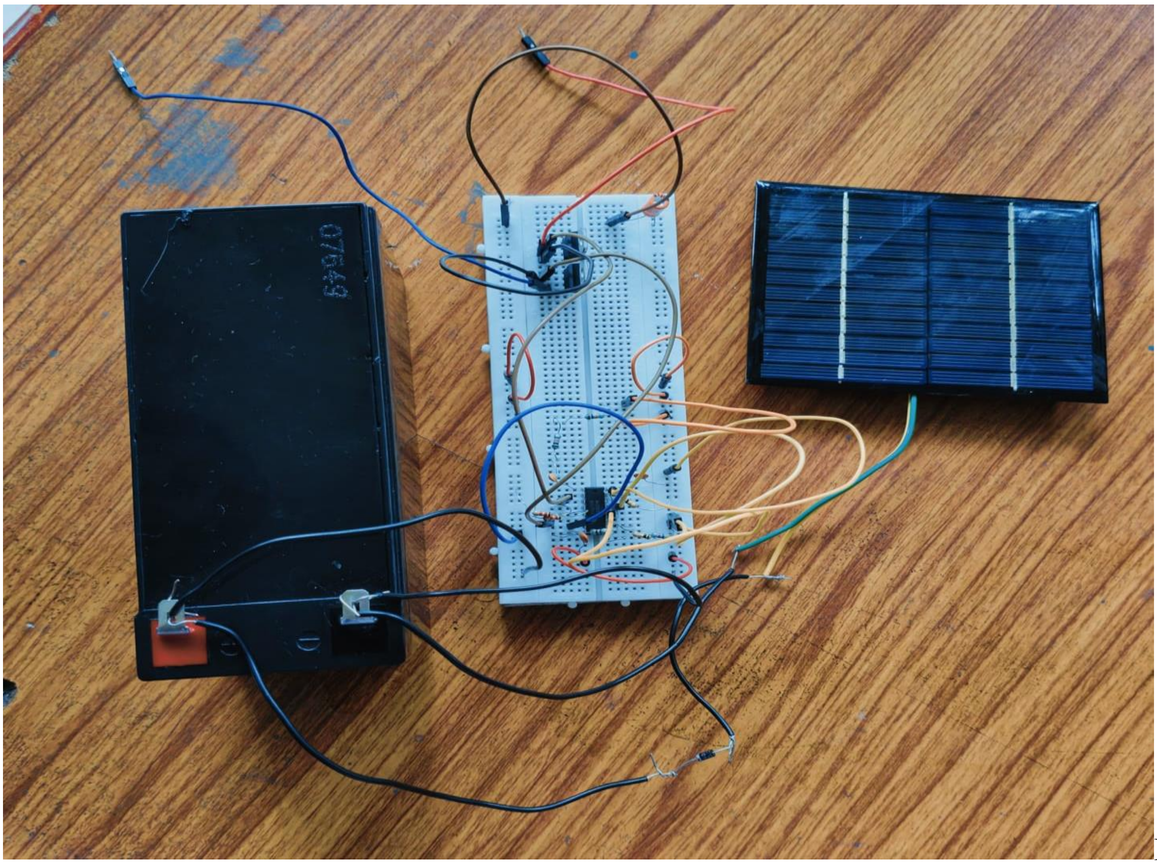

Fig. 5.5 Hardware Implementation of Solar Inverter

CHAPTER 6

ADVANTAGES & APPLICATIONS

Advantages

1. Constant and uninterrupted supply.
2. There is no requirement of electricity and manpower to operate the device.
3. With no moving parts involved, its efficiency is further enhanced.
4. It acts as a power backup solution.
5. Circuit can be checked with 12 volt (DC) universal power supply.
6. It is one of the methods of renewable generation.
7. This is an ecofriendly means of power generation.
8. It can be used in distant villages where transmission cost is much higher.
9. Reduction in consumption of conventional sources of energy.

DISADVANTAGES

1. Initial cost of installation is very high.
2. Area required for installation is large.
3. It will be less effective in rainy days.
4. Protection system instalment is very high.
5. Cause problems to eyesight because of solar reflectors.

Applications of Solar Inverter

1. DC POWER SOURCE UTILIZATION

An inverter converts DC electricity from sources such as batteries, solar panels, or fuel cells to AC electricity. The electricity can be at any required voltage; it can operate AC equipment designed for mains operation, or rectified to produce DC at any desired voltage

2. UNINTRRUPTABLE POWER SUPPLY

An uninterruptible power supply (UPS) uses batteries and an inverter to supply AC power when main power is not available. When the main power is restored, a rectifier supplies DC power to recharge the batteries.

3. HVDC POWER TRANSMISSION

With HVDC power transmission, AC power is rectified, and high voltage DC power is transmitted to another location. At the receiving location, an inverter in a static inverter plant converts the power back to AC.

CHAPTER 7
CONCLUSION & FUTURE SCOPE

CONCLUSION

Photovoltaic power production is gaining more significance as a renewable energy source due to its many advantages. These advantages include everlasting pollution free energy production scheme, ease of maintenance, and direct sunbeam to electricity conversion. However, the high cost of PV installations still forms an obstacle for this technology. Moreover, the PV panel output power fluctuates as the weather conditions, such as the insolation level, and cell temperature. The design of the system described will produce the desired output of the project. The inverter will supply an AC source from a DC source. The project described is valuable for the promising potential it holds within, ranging from the long-term economic benefits to the important environmental advantages. This work will mark one of the few attempts and contributions in the Arab world, in the field of renewable energy; where such projects could be implemented extensively. With the increasing improvements in solar cell technologies and power electronics, such projects would have more value added and should receive more attention and support.

FUTURE SCOPE

As the whole world is facing the problem of global warming and energy crisis, our project will help to reduce these problems by using solar energy to generate electricity. Solar energy is an infinite source of energy. Main motto of our project is to promote use of renewable energy sources. This project is the most useful in our life because in this project one time investment fixed on lifetime. In future one day nonrenewable energy will end then we will use to the renewable energy. The solar inverter made by us is just a prototype for making future projects which incorporate advanced technologies like micro controlled solar tracking, charge control, etc. this is to show that solar inverters are very cheap and easy to install so that the energy demands are shifted on using renewable sources of energy. There are more advancements pending in this field which will revolutionize the energy stream, and solar energy will be playing the most important role of all.

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