SOLAR CHARGER USING ARDUINO

AIM:

Design and Development Solar Charger Using Arduino.

PURPOSE:

Solar chargers are widely used with various charging methods like PWM and MPPT. But these technologies are complex and expensive. Here we want to implement simple solar charger that can charge battery continuously without harming battery. Also, it has Mobile charger provision with ON/OFF switch. Also we can monitor battery voltage on LCD. Here, proposed title is solar charger using Arduino.

DESCRIPTION:

Solar panel connected to Battery through forward bias diode. Diode can protect from reverse flow of current from battery to solar panel. 5V output power supply board connected to battery that can give 5v DC to charge mobiles. This board has ON and OFF switch to make charger cable power enable and disable.

WORKING:

Solar panel continuously charge battery with direct current. Battery is a three cell lead acid 12v battery that has provisions of 4v, 8v and 12v outputs. Three 4v batteries connected in series to get 12v output. In working project we have clip to hold battery terminal and we can change it from cell to cell to vary voltage. This is for our demonstration purpose to show different voltage values on LCD.

TECHNICAL SPECIFICATIONS:

HARDWARE:

Microcontrollers	:	Arduino Uno
Crystal	:	16 MHz
LCD	:	16X2 LCD
Solar Panel	:	12V DC
Battery	:	12V DC
Voltage Sensor	:	Resistor based voltage divider
Power Source	:	12VDC Battery

SOFTWARE:

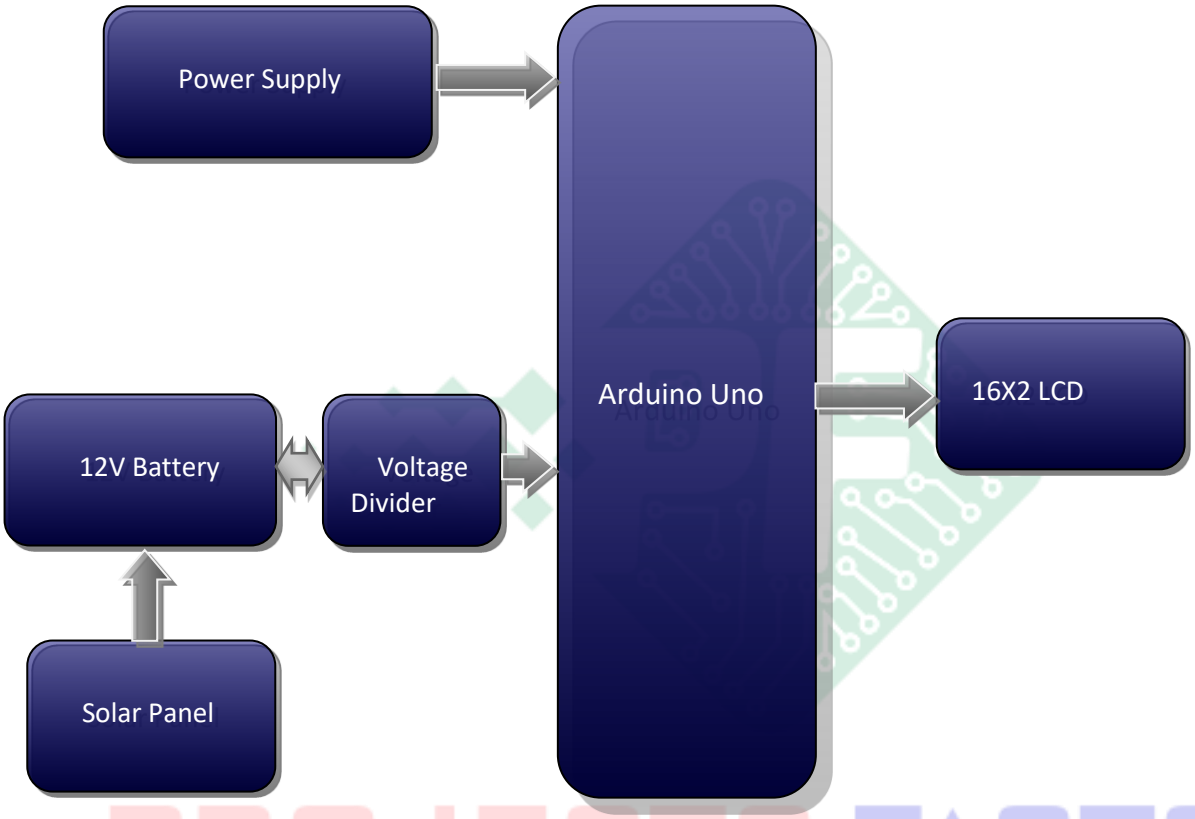
Arduino IDE

Proteus based circuit diagram

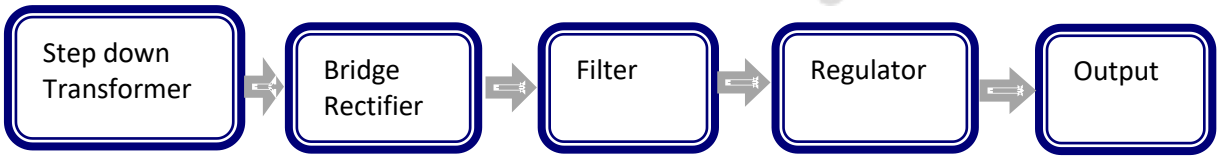
APPLICATIONS:

- Solar chargers
- Battery monitoring systems
- Solar Mobile Charger

BLOCK DIAGRAM:



POWER SUPPLY BLOCKDIAGRAM:



INTERFACES COVERD:

- We have covered Solar panel and voltage sensor interface