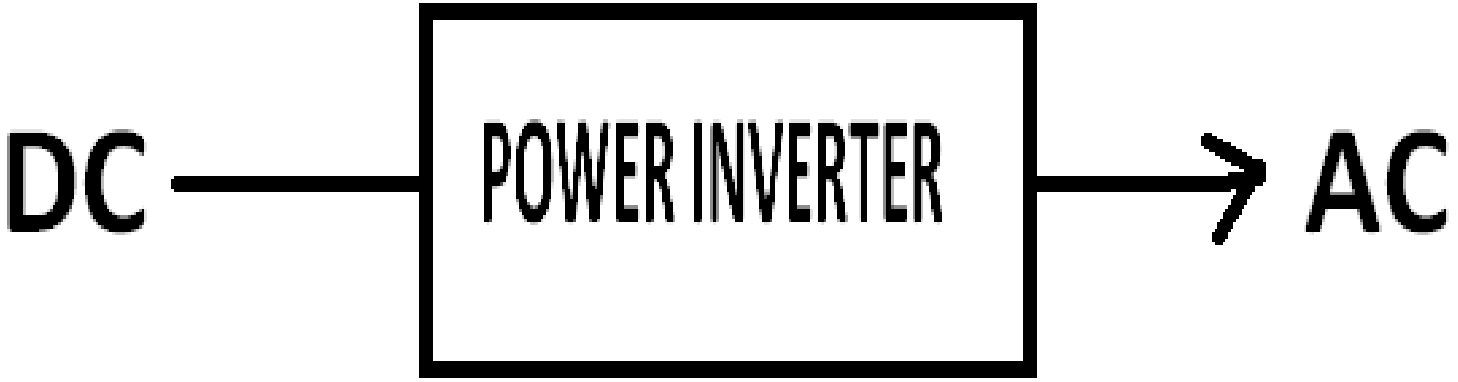
SINGLE PHASE FULL BRIDGE INVERTER
(HARDWARE APPROACH)

What is INVERTER?

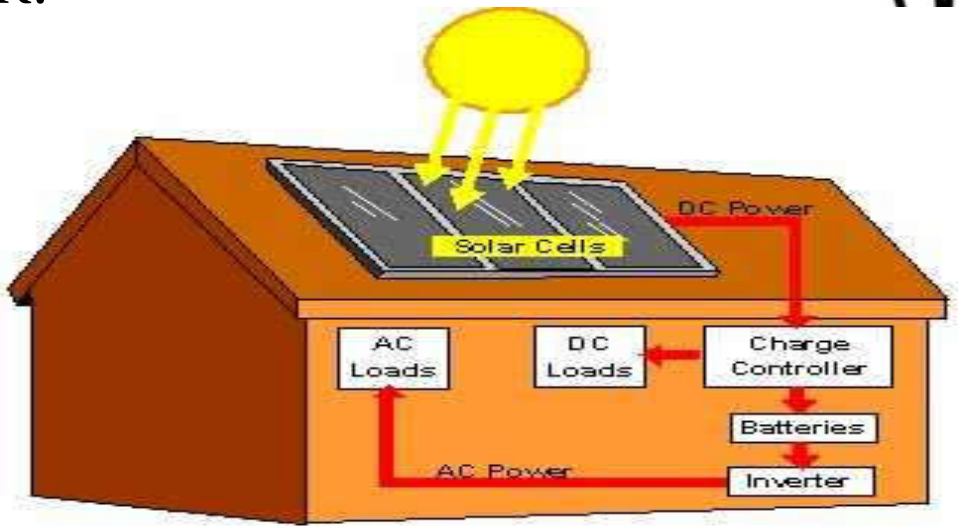
A POWER INVERTER IS AN ELECTRICAL DEVICE THAT CHANGES DIRECT CURRENT (DC) TO ALTERNATING CURRENT (AC).



APPLICATIONS OF INVERTER:

1. INDUSTRY
2. SOLAR & BACK UP POWER SYSTEM i.e. IPS
3. LIFT
4. INDUCTION HEATING

etc...



There are Three kind of INVERTER

- 1.PUSH PULL INVERTER
- 2.HALF BRIDGE INVERTER
- 3.FULL BRIDGE INVERTER
- ……
- THERE MORE EFFICIENCY INVERTER IS FULL BRIDGE INVERTER(50%)

- FULL BRIDGE INVERTER

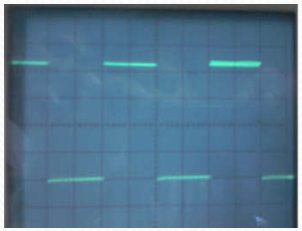
BLOCK DIAGRAM OF OUR INVERTER

DC POWER SUPPLY

OUTPUT

AC VOLTAGE

ACROSS THE LOAD

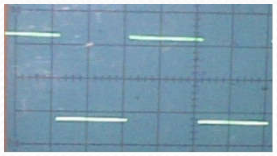


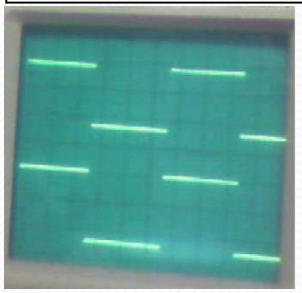
4 SEMICONDUCTOR SWITCHES (MOSFETS –Q1,Q2,Q3,Q4)

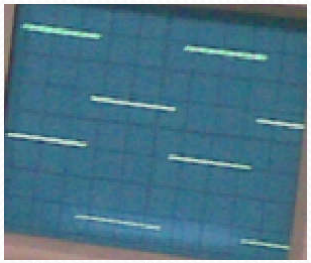
OPTOCOUPLER

OPTOCOUPLER

SIGNAL GENERATOR



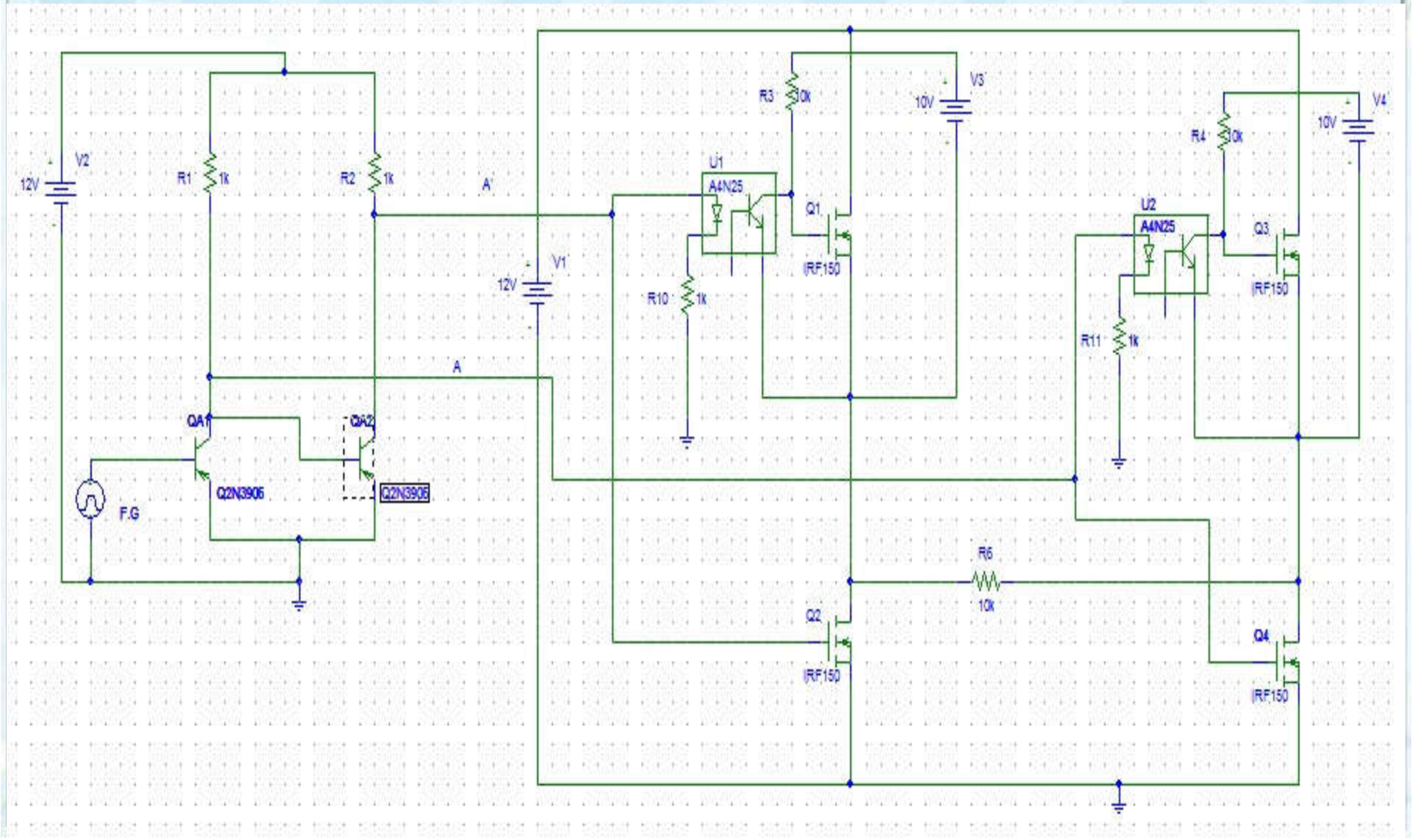




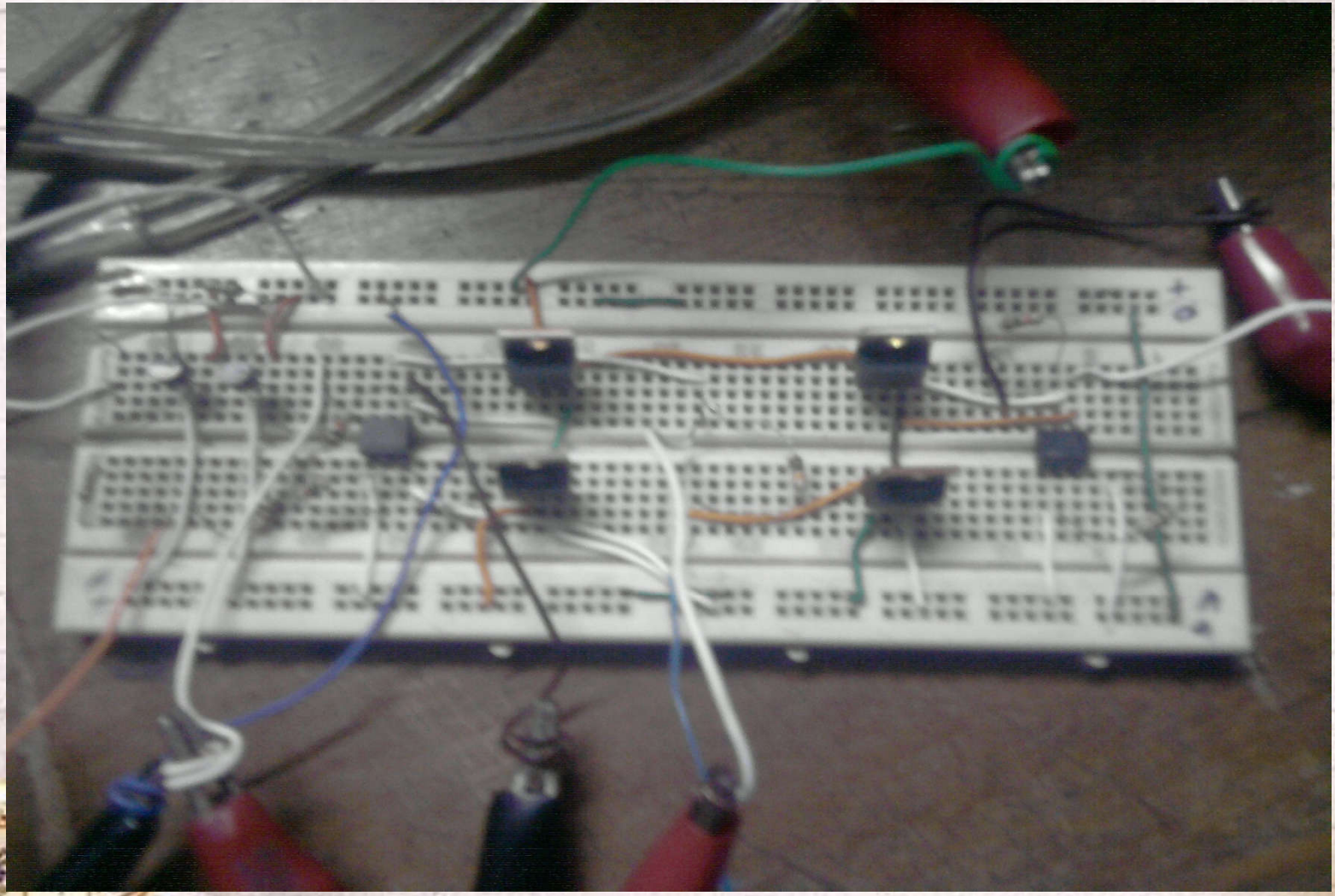
Q1 & Q4

Q2 & Q3

CIRCUIT DETAILS



EXPERIMENTAL SET UP

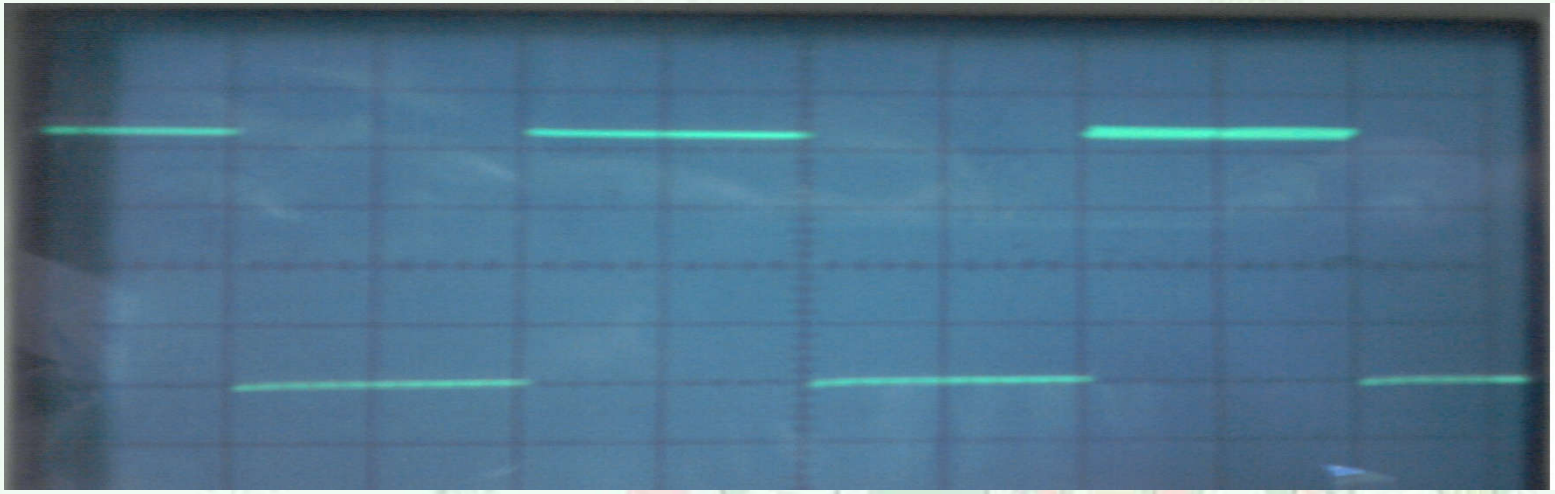


OBSERVATIONS

OUTPUT CALCULATIONS

CASE1: V_S=12V , R_L= 1KΩ ,I_L=0.012A ,P=0.144W

CASE2: V_S=15V , R_L=1KΩ ,I_L=0.015 A P=0.225W



FEATURES OF OUR INVERTER

1. HIGH EFFICIENCY
2. SIMPLE CIRCUITRY TO MAINTENANCE
3. HIGH POWER HANDLING CAPABILITY

If use in IPS FULL BRIDGE INVERTER

- In our Bangladesh all IPS company use push pull inverter……..(20~25)%
- If we use full bridge inverter than……we get EFFICIENCY more than 50%
- So our energy are save…….. 

THANK YOU