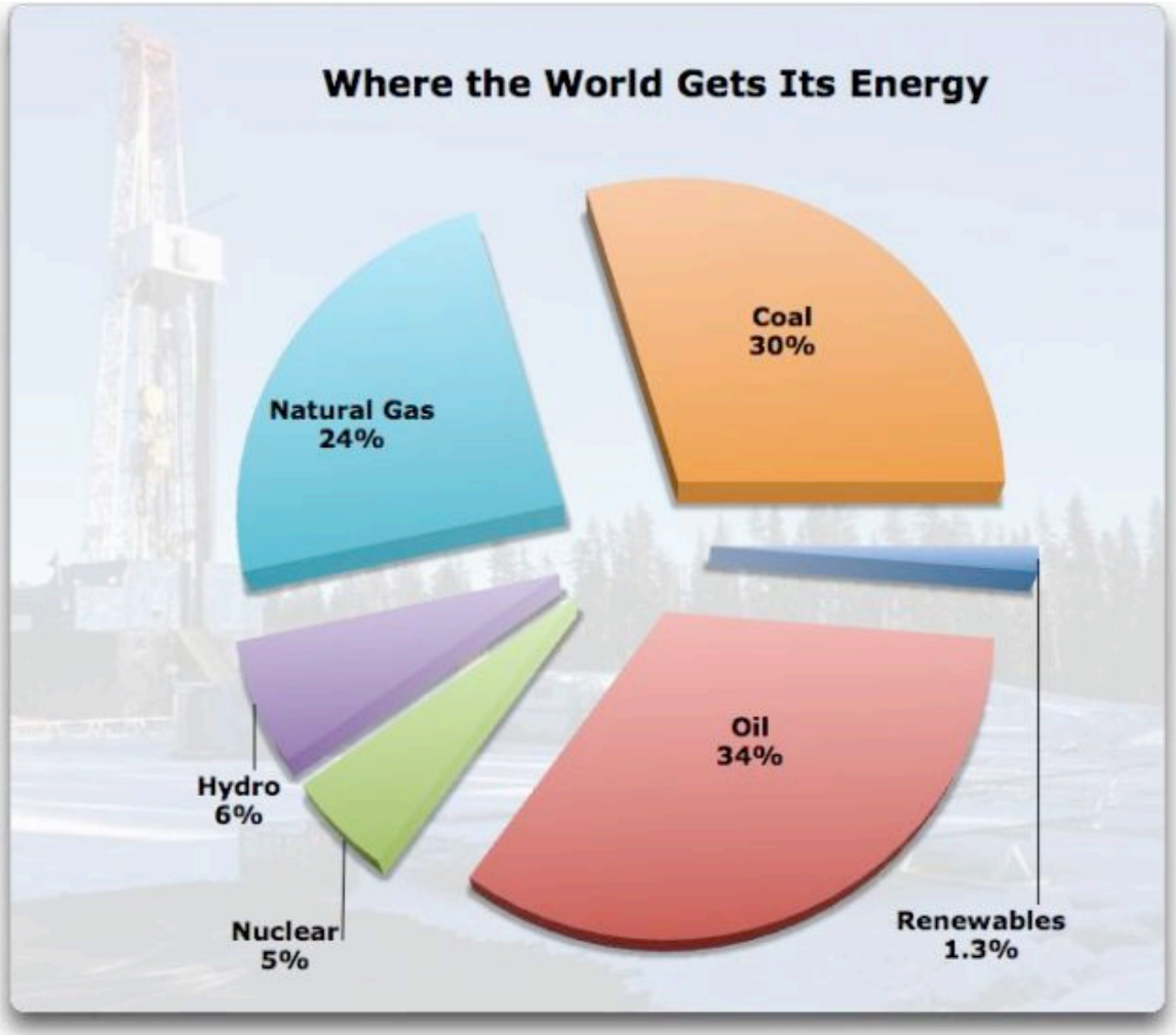
Solar Cells

Carmen Huang

Outline

- Motivation
- Background Information
- Mini Lab Activity
- Conclusion
- Surprise!

Motivation

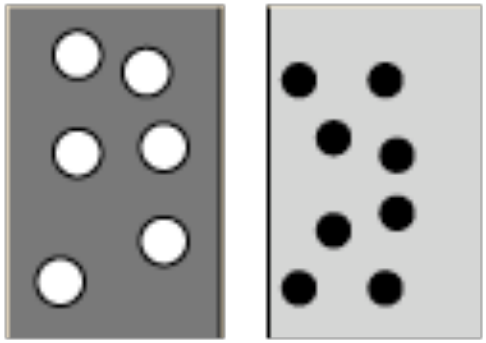

Where the World Gets Its Energy
Coal
30%
Natural Gas
24%
Oil
34%
Hydro
6%
Nuclear
5%
Renewables
1.3%

Background Information

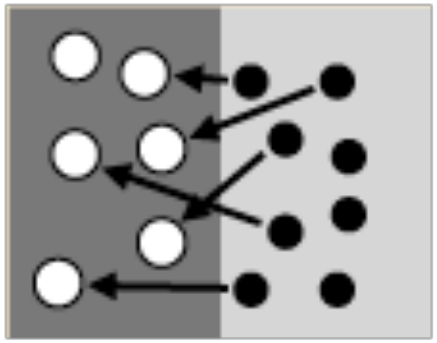
- Solar energy is a renewable energy source
- We can use solar cells to convert solar energy into electricity
- Solar cells produce direct current (DC) electricity and an inverter can be used to change this to alternating current (AC) electricity

Background Information

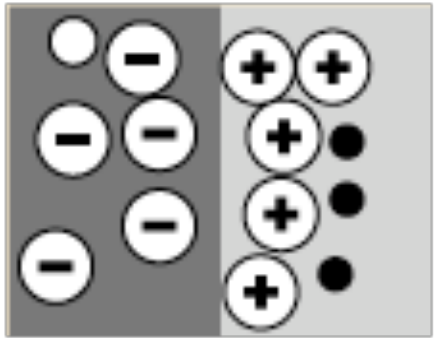
- 1)



- 2)



- 3)



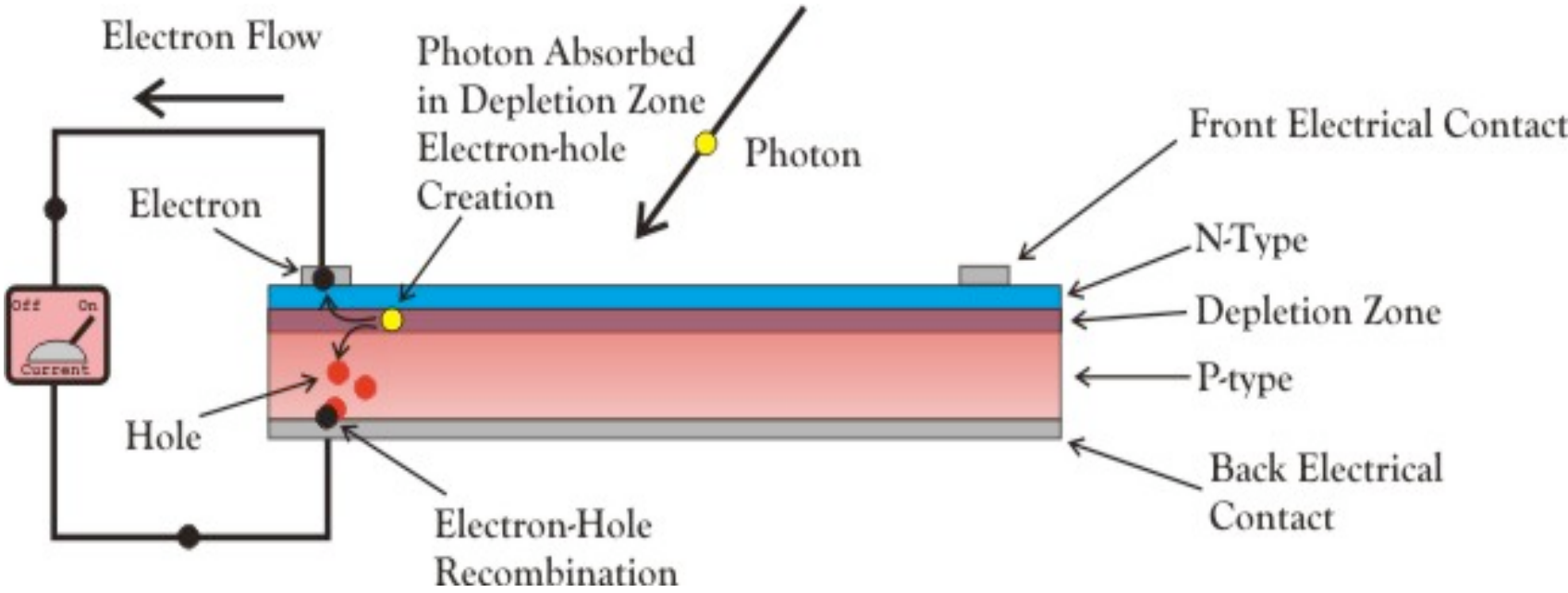
Legend

Electron Hole

Negative ion from filling of p-type vacancy.

Positive ion from removal of electron from n-type impurity.

Background Information



Mini Lab Activity

Conclusions

- When a PV cell is perpendicular to the light source, it intercepts the most energy
- When a PV cell is closer to the light source, it intercepts more energy
- Current readings will be larger when more light is absorbed

Solar Car Race!