Name: Mohammed Yahia Yusuf Mohammed index:154092

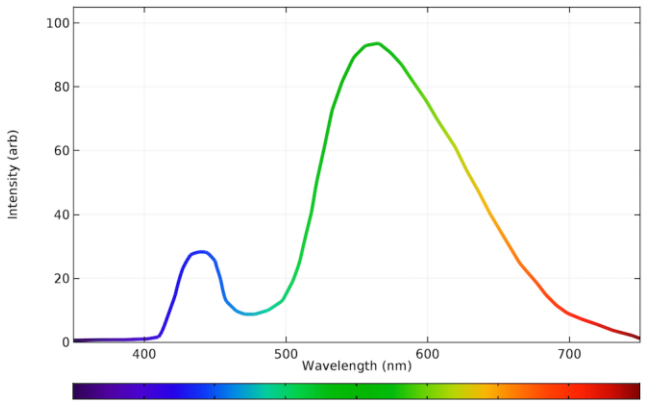
Electronics lab project

INTRODUCTION:

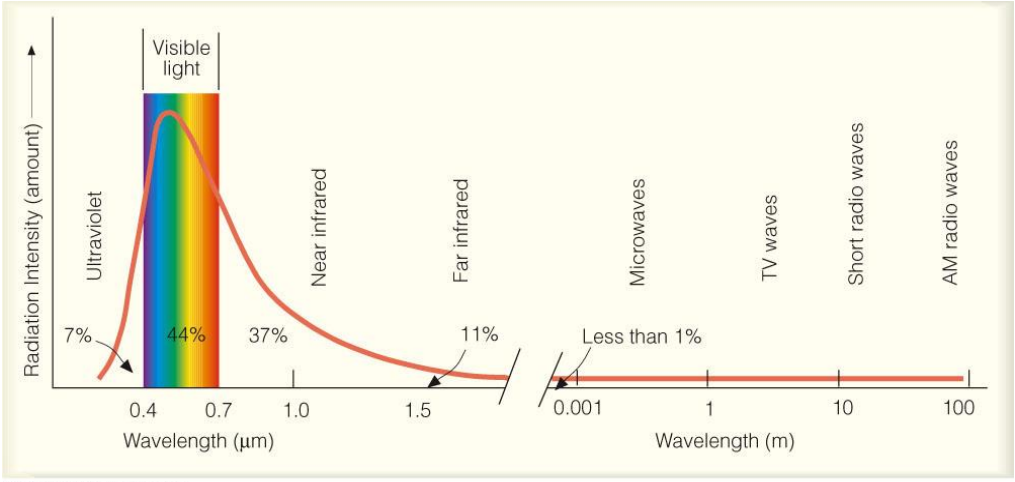
Lighting public and private places is an important issue in our modern life , our subject is to create an electronic system that control the state of lights by automatically switching off during the day and on during the night , our system have to be sensitive just for the sun light ,and we have to handle the case if some object based benign the sensor by generating a delay before changing the state of the lights , also our system must satisfy some water and particles resistance .

LITERATURE REVIEW:

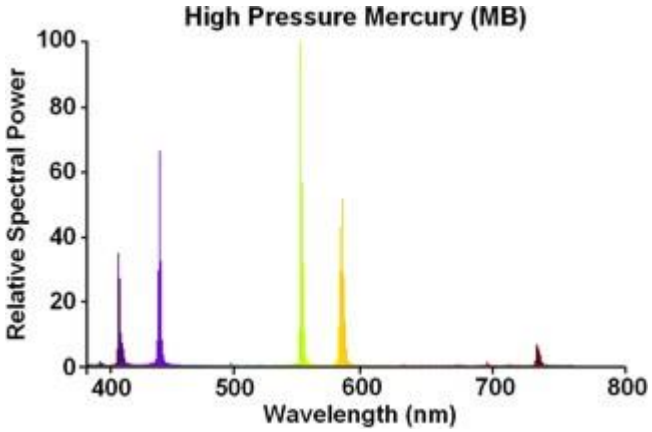
Visible light is just a Bart of the electromagnetic spectrum,. Microwaves, radio stations, fire, and even our bodies, deferent light sources Produces deferent EM waves in frequency that result in the ability to distinguish the source of the EM From its spectrum, for the case of the sun its clear that the unique characteristic of the sun light from other widely used sources is the existence of UV light as shown below



LED lamb spectrum



Sun spectrum

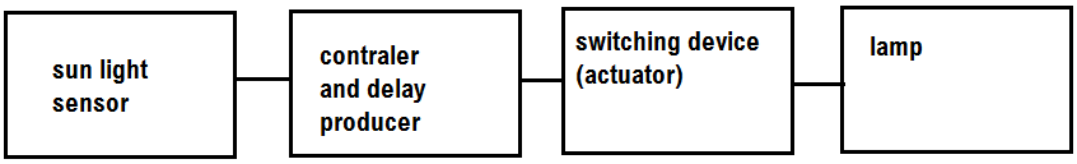


Mercury lamb spectrum

For the design of the controller and delay element we can ether depends on digital elements or analogy element analog electronics is very useful when dealing with simple systems , while the digital components are more accurate less power consumption but more complicated .

Switching device can be ether solid state or mechanical for example relays, one big advantage of the solid state relay is the ability of switching ac loads at the point of zero load current . in addition of fast switching compered to mechanical one . while mechanical relay have much less contact resistance .

PRIMARY DESIGN:


sun light
sensor
contraler
and delay
producer
switching device
(actuator)
lamp